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DONATO D'ANGNOLO BRAMANTE

BORN 1444. DIED 1514. NATIVE OF URBINO, ARCHITECT OF THE TEMPIETTO OF S. PIETRO IN MONTORIO, THE COURT YARD OF SANTA MARIA DELLA PACE, WORK AT ST. PETER'S AND THE VATICAN IN ROME, AND OF THE CHOIR AND DOME OF SANTA MARIA DELLE GRAZIE IN MILAN

THE BRICKBVILDER

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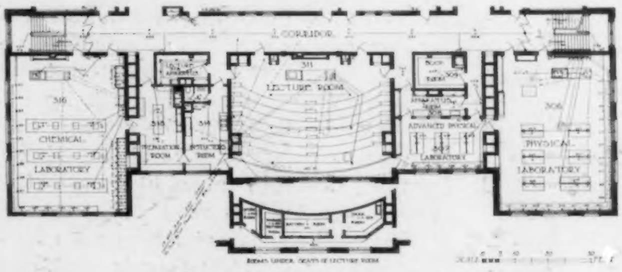
The High School.

THE PLANNING AND EQUIPMENT OF THE SCIENCE DEPARTMENT.

By WALTER H. KILHAM.

THE problems presented to the architect in the designing of a modern high school, while identical in matters of general detail with those of an elementary school, are much more complicated and varied on account of the many different courses of study, the elaborate apparatus which is installed, and the "collegiate" features connected with the social life and physical welfare of the pupils. A commercial or vocational high school of the present period combines most of the features which until recently were found only in the larger universities, together with many others which are purely a development of high school education. A high school of a thousand or twelve hundred pupils may require, in addition to the regular standard class rooms, 24 by 30 feet, accommodating say thirty-five pupils, a certain number of recitation rooms seating about twenty pupils each; probably one or two study halls; large rooms with single desks and chairs accommodating from seventy-five to one hundred and fifty or more pupils; a library; a science department with laboratories and lecture rooms equipped for instruction in chemistry, physics, and possibly biology and botany; a commercial department for instruction in bookkeeping, stenography, typewriting, and banking; rooms for free-hand and mechanical drawing; a music room; a department for domestic science, *i.e.*, cooking, housekeeping, and sewing; and a manual training department for wood and iron working. In addition to these usual pedagogical requirements some cities introduce facilities for the study of printing, bookbinding, natural history (with menageries of animals and birds), and various other topics.



Portion of Third Floor Plan, Showing Science Department
Salem High School, Salem, Mass.
Kilham & Hopkins, Architects

The social and physical cultural side of the school's work requires an assembly hall, gymnasium, and locker accommodations, perhaps a swimming pool, a lunch room, rooms for the school paper and athletic society, and in large cities sometimes an arrangement on the roof for outdoor dancing.

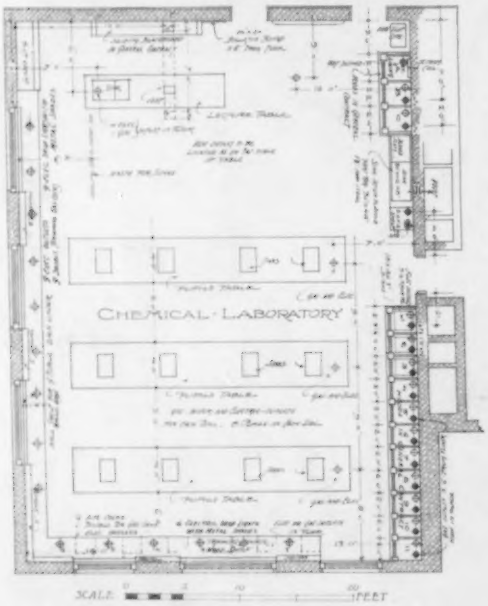
The administrative department requires accommodations for the principal and his assistants, clerks, retiring rooms for men and women teachers, a teachers' lunch room, and rooms for the physical directors for boys and girls.

Provision also has to be made for the pupils' clothing, storage of books and apparatus, unpacking of cases, toilets, bicycles, heating and ventilating apparatus, vacuum cleaner, and various other things which may vary in different places, not forgetting permanent provision for the inevitable wireless outfit which will surely encumber the roof with unsightly aerials made by a local carpenter unless a neat construction is provided in the contract.

High schools are generally equipped for instruction in chemistry and physics, and sometimes for biology, physiography, and various other sciences. The most elaborate equipment is that required for chemistry and physics, and a separate laboratory is generally provided for each of these two studies, ordinarily fitted up for sections of twenty-four students at a time to practice experiments. As the lectures on these subjects require the setting up of special apparatus which requires a good deal of time, it is convenient to assemble several sections at one time in a lecture room which seats multiples of sections, as forty-eight, seventy-two, ninety-six, or one hundred and twenty. This lecture room is most conveniently placed between the chemistry and physics laboratories, with storerooms adjoining on either hand for chemical and physical apparatus. When the school is a small one and one teacher handles the entire science department, one storeroom may be enough; but it is always better to provide separate rooms to avoid possible damage to delicate physical apparatus by fumes from chemicals. Windows may be arranged in these storerooms for passing out materials, but doors will usually suffice.

Location of Science Department. On account of the desirability of quickly getting rid of the fumes from chemical experiments the science department is generally located on the top floor. If placed on the first floor or basement,

Chemistry Laboratory, Salem High School, Showing Tablet Chairs on Which to Take Notes



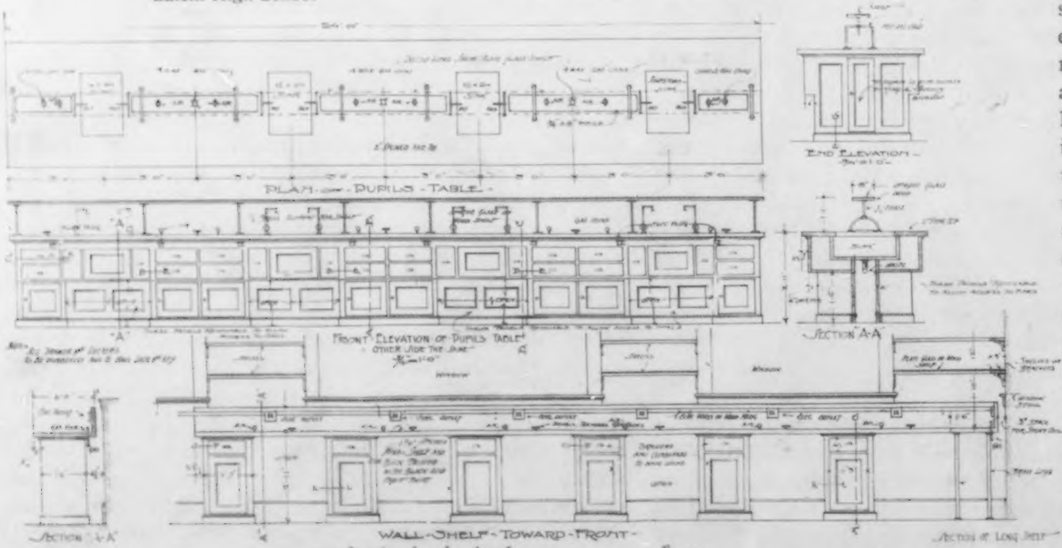
Detail Floor Plan of Chemistry Laboratory
Salem High School

the plumbing would be greatly simplified and the wastes from the chemistry sinks which have a tendency to corrode iron pipes could be carried away in tile. Some educators also prefer to keep the older classes on the ground floor, where they may receive more personal attention from the principal, and as science is an upper class study this at once locates the laboratories on the ground floor. But the most general practice by far is to keep the younger children near the ground and the laboratories at the top, where they can be easily ventilated and well lighted by skylights, if necessary. Another advantage is the additional ceiling height which may be obtained for the science lecture room. On account of the amphitheatrical arrangement of seats a high ceiling is often required which is difficult to provide on the ground story, but can be easily managed at the top of the building. This arrangement also involves placing most of the class and recitation rooms downstairs and hence precludes a great amount of stair climbing by pupils who do not need to use the laboratories. Two stories ought to be the limit of height for suburban high schools, and the realization of such a practice seems to be in sight. At all events, the place for the laboratories is generally conceded to be the top story.

The Chemistry Laboratory. The walls of the chemistry laboratory may preferably be of brick covered with a paint containing no lead, as lead will soon become discolored by the chemical action of gases. Plastered walls are often used to give a more finished aspect to the room, or on account of constructional difficulties in making all the walls of brick.

Ventilation. The ventilation of the rooms is arranged as in other rooms, except that special ventilation for noxious gases is provided in hoods which will be later described. In some cities provision is made for removal of gases from all experiments "at the source" over the working desks, by funnel-like pipes of copper leading down to a duct underneath, but this is not usually thought to be necessary.

Floor. Various opinions exist as to the floor of the chemistry laboratory. A cement floor is hard, cold, liable to "dust," and subject to injury from acids. Floors of the various magnesia compounds are perhaps not so cold and are in some ways superior. Terrazzo is subject to the same objections as cement. Asphalt is suitable in many ways, and is waterproof, but is unpleasant in appearance and somewhat soft and liable to injury by chairs and tables sinking into it. Tile, set in cement, is expensive, but in many ways makes an ideal floor for a laboratory. Wood is very commonly used for cheapness, and narrow strips filled in by asphalt make a very satisfactory compromise. It is rarely necessary to drain the floor. Some carefully kept schools have immaculate floors of waxed maple in their laboratories.



Detail of Fittings of Pupils' Tables in Chemistry Laboratory, Salem High School, Salem, Mass.
Kilham & Hopkins, Architects

Equipment. — The working desks are generally made

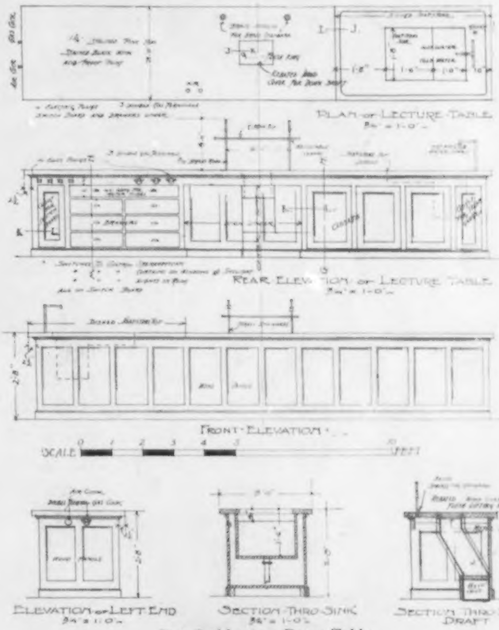
4 feet wide, with spaces 4 feet wide between, to allow students to work facing each other. This causes half of the students to have their backs toward the instructor at all times, resulting, as some claim, in a loss of the teacher's efficiency of at least 50 per cent. Some laboratories have been fitted up with one-way desks at which all the pupils face toward the front of the room. These may be 28 inches wide, with aisles 3 feet wide, and some educators make the claim that one instructor can handle twice as many students when the desks are so arranged. When the double-front system is used, the desks are made in sections which are placed back to back and are movable when the top is removed. This enables the room to be thoroughly cleaned during the summer vacation without disturbing the plumbing pipes. The desks contain drawers and lockers arranged as shown in the drawing for four times as many pupils as work at one time, *i.e.*, a laboratory which accommodates twenty-four students at one time would have drawer and locker accommodations for ninety-six, or four sections during the day. In large high schools, or schools operating also in the evening with a night master, a still further development of this space is necessary, which may be accomplished as in the Boston High School of Commerce by alternating with the working benches "blanks" or tables 3 feet wide, containing drawers and lockers, but no plumbing. These tables are very useful in providing additional apparatus space for the pupils while working. The working tables are 36 or 38 inches in width and a linear working space of 4 feet is allowed per pupil. Under each pupil's position an open space is arranged, both to give toe room and to provide a place for a stone receptacle for waste. The table is generally built of oak with a top of splined white pine 2 inches thick, treated with an acid-proof finish made as follows:

First Coat. 125 grains copper sulphate powder, 125 grains potassium chlorate, 1 liter of water. Heat in steam bath or double kettle in glass or porcelain vessel till dissolved. Apply one coat hot with clean brush.

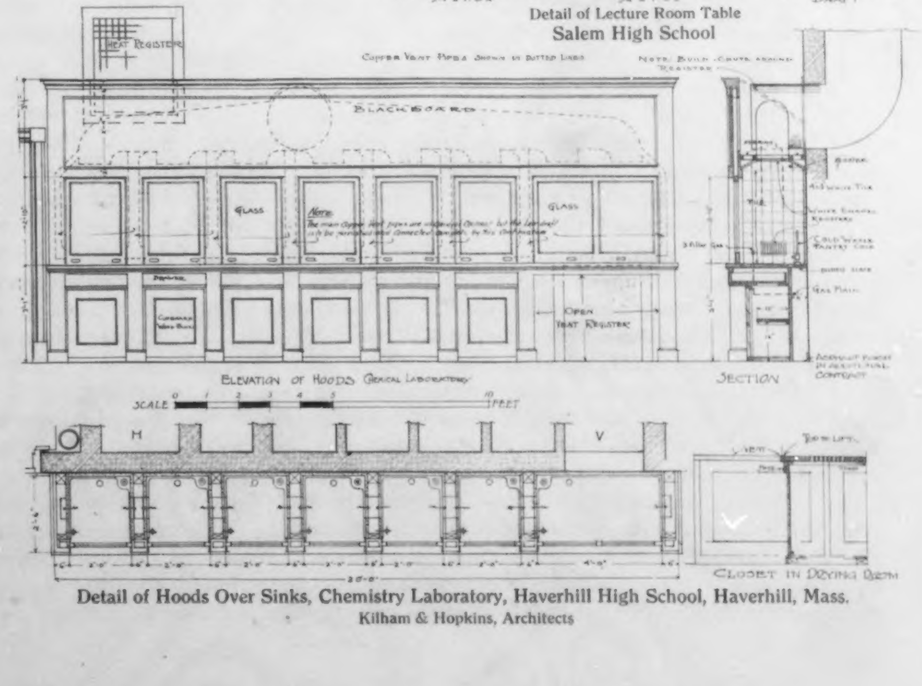
Second Coat. 150 grains of aniline hydrochlorate, 1 liter of water. Dissolve same as above. Apply three coats with a clean brush, each coat to become thoroughly dry before applying next. Color will become green when first applied, but in several days will turn a dead black. Allow material to thoroughly dry and wipe bench tops with linseed oil. The above quantities will cover about 5 square yards.

Slate or soapstone tops are occasionally provided and have the advantage of presenting a neater appearance, but the bill for breakage of glass apparatus is higher and they are less easily removed. The appearance of a laboratory rests mainly with the instructor. In some laboratories the woodwork is stained and corroded by acids after a year's wear, while others retain their first freshness through a considerable period of time. Soapstone sinks are arranged in the form of a continuous trough or individual sinks. The long trough is adequate for teaching elementary chemistry and is less expensive than the separate sinks. It should be at least 8 inches wide, 6 inches deep at the upper end and 8 inches deep at the lower.

Science Lecture Room, High School of Commerce, Springfield, Mass.
Kirkham & Parlett, Architects



Detail of Lecture Room Table
Salem High School



Detail of Hoods Over Sinks, Chemistry Laboratory, Haverhill High School, Haverhill, Mass.
Kilham & Hopkins, Architects

Reagent shelves are generally provided, running longitudinally in the center, 10 or 12 inches above the desk, supported on metal standards. This shelf should have an acid-proof surface, which is sometimes accomplished by giving it a surface of plate glass, clamped firmly to the wood, which may be painted white under the glass. Others prefer to keep the reagents in cases at the ends of the working desks; but the general tendency is to eliminate all unnecessary complication of the laboratory equipment and in many modern schools the shelves are being omitted entirely.

In addition to the plumbing the desks are equipped with gas, alternating and direct electric current, steam and compressed air, located as shown in the accompanying drawing.

Some teachers like to have a space in the laboratory equipped with a demonstration desk and about twenty-four tablet chairs where the section can assemble for instruction before going to the tables to perform the experiments. A "battery" of triple blackboards may be located behind the demonstration desk.

For use in experimenting with substances which produce noxious gases, a half dozen or more hoods are provided at the side of the room. These are best lined with white tile, with slate or red tile floors and sliding glass fronts. The space above the opening may be utilized for a blackboard. Electric light and gas outlets are provided in each hood, or, if desired, the electric light may be hung outside each window. "Down draft" ventilating outlets are sometimes built in the pupils' tables with movable hoods to fit into them, but their use is scarcely necessary and tends to complicate the equipment.

Wall benches are often provided for special or additional students, provided like the other tables, with gas, electricity, etc., and copper sinks, which are made removable so as to gain additional working space.

A good sized soapstone sink is also desirable with draining pegs above for drying beakers and test tubes.

The teacher should be provided with a private office fitted up with a laboratory, table, space for a desk, etc., where he can prepare his lecture apparatus and work on experiments without danger of disturbance. The motor generator set is sometimes located here.

The Science Lecture Room. Adjoining the chemistry laboratory, and separating it from the physics laboratory, is located the lecture room, which should accommodate from forty-eight to one hundred and twenty pupils in seats raised in an amphitheater in such a way as to give them the best possible view of the lecturer and the demonstration desk. Behind the desk one or two hoods should be located and a battery blackboard, and, if the room is located in the upper story, a skylight may profitably be placed directly above the lecturer. In fact, outside window light is not necessary for this room. The best arrangement is undoubtedly to have the room lighted from one side so that the pupils face parallel with the light; but if the rise of the bank of seats is high enough to prevent the light from shining directly into the teacher's eyes, the windows may be located behind the pupils.

As a stereopticon will often be used in connection with science lectures, a space should be arranged for one at the rear of the room with receptacle for plugging in for electric current and a concealed signal system operated from the demonstration desk. To ensure absolute darkness for the stereopticon, the windows, skylights, and glass panes in the doors, if there are any, should be equipped with light-proof black shades, running in grooves, which effectually prevent the entrance of any light. Some time is lost and confusion caused by sending pupils to draw these shades, which may be prevented by operating the cords by a small electric motor controlled from the demonstration desk.

This desk (see drawing) is about 15 feet long, 3 feet wide, and 2 feet 8 inches high, with splined pine top and a sink of two depths, placed at the right hand end facing the pupils. A dished soapstone slab covers about 5 feet of this end of the desk. Electric receptacles and gas cocks are provided, together with steam, compressed air, a down draft outlet with cover, a pair of brass standards 4 feet high with adjustable clamps for a horizontal bar, and switches for controlling the lights in the room, the stereopticon, and the curtain motor. Cupboards and drawers and the switchboard cabinet are arranged underneath. All connections of any sort for apparatus used in experiments should be placed in the demonstration desk to avoid the necessity of stretching wires, etc., across the space between it and the wall. On account of the large number of pupils to be accommodated, this room should have two doors to the corridor.

Dark Room, etc. A dark room, with sink for use in photography, should be provided, and a photometry room, with a table allowing a free length of at least 14 feet.

Storerooms. Ample storage space with shelving and glass cases is needed for valuable chemistry and physics apparatus, and this should be located adjacent to the lecture room and laboratories. A few schools go so far as to provide a straight railway track the entire length of the science department so that a table may be arranged for a lecture and then wheeled directly in; but this requirement is one which but seldom confronts the architect.

The Physics Laboratory. The physics laboratory requires room for six strong tables, each 4 by 6 feet, giving space at each for four pupils to work and fitted with gas, electric current, compressed air, etc., as in the chemistry laboratory. Wall tables are located around the room on sides where there are windows. They are equipped with gas, electric current, and cold water supplies and drains. In order to save space movable copper sinks are made and arranged to fit into the holes leading to the drains. When not required they may be removed, allowing use of the bench for other purposes. Instead of double tables the "one-way" system is sometimes installed also in physics laboratories, allowing all pupils to face the front of the room, with corresponding gain in efficiency.

Another system sometimes adopted is to equip the physics laboratory with tables of ordinary height (30 inches), arranged in U-shape, at which pupils may sit in common chairs. These tables have gas and electric outlets, but no high cross bars. Rooms so arranged have a very attractive appearance.

The Biological Laboratory. This is often equipped with low, glass topped tables seating two pupils each, some built-in glass cases and drawers, an aquarium, and a large marble sink in two depths. The room may well have a southern aspect and be equipped with a small conservatory for the observation of growing plants. A demonstration desk fitted up similarly to one for chemistry is sometimes, but not often, provided.

Diagrammatic Progress Schedules.

PART II.

By CHARLES A. WHITTEMORE.

THE diagrammatic progress schedule, as has been previously outlined, may be of inestimable value to all of those interested in the construction of modern buildings from a residence to the largest commercial enterprise.

It is also of interest to all of the individual contractors, sub-contractors, owners, architects, and real estate men from the standpoint of economy and efficiency, in economy both of time and of construction, and efficiency of administration.

The general contractor in first approaching a problem of this kind would naturally ask how he may benefit by the adoption of what might seem at first an added burden to his clerical force, and without some satisfactory solution of this problem and without some sufficient representation to him that he will directly benefit thereby in a manner distinctly proportionate to the cost of maintaining such a system, he naturally would be reluctant to assume charge of a schedule of this character.

It appears, however, upon close examination of the subject and study of the construction of various buildings, that the contractor does benefit by it to a large degree — to a larger degree, in fact, than from any other one method of checking up his work, and this we believe can easily be demonstrated.

Each general contractor of any size has a distinct organization which is composed of two parts: the clerical part or office force, and the administrative part or superintendents and foreman. These two units co-operate in the endeavor to carry out contracts under their charge, and the work of one part is known to the work of the other branch of the organization in the majority of cases only through personal contact. This involves expenditure of considerable time on the part of the intermediary in the nature of visits from the building to the office, or to the building from the office, purely for the purpose of explaining certain things which cannot be readily communicated by telephone or letter.

It is true that a representative of the office force, which in a great many cases is the general contractor, makes continual visits to the various buildings and keeps in personal touch with the different items; but where an organization is of sufficient size to control many projects, a casual examination on the part of the general contractor in visiting a building undoubtedly may result in several things being overlooked which might be of vital importance in the saving of a few days in the construction of the building — and each day means dollars.

It seems apparent, therefore, that a general contractor who depends entirely upon communication by telephone, letter, or personal visit is restricted in the amount of work he is able personally to supervise, and without his personal supervision the work for which he is directly responsible undoubtedly will suffer to a certain extent.

It is of extreme importance, therefore, that some means be devised for apprising the general contractor himself, or his office force, of the exact status of all the different contracts under their control, as well as of all of their own work at any particular time. To accomplish this result the diagrammatic progress schedule serves admirably.

It is not necessary that the general contractor increase his clerical force in order to maintain this schedule up to the minute, nor is it necessary that he put an additional man on the building; it is only necessary that the man on the building having charge of this schedule apply himself for a few minutes a day to the maintenance of this system, and this can be done as has already been demonstrated in actual building construction without loss of time from any other necessary labors.

It then seems that, if a simple system of this character can be operated without an increase in the office force and without any loss of time from other duties on the part of those already employed, the reasons for its use are sufficiently obvious, even though it should not serve the contractor to the fullest capacity of which it is capable.

Another consideration which is of vital importance is that by the progress schedule the contractor can control more exactly, more efficiently, and more readily the actual receipt and delivery of materials required; for example, if the contractor finds that his excavation has advanced beyond the point at which he expected it to be on a certain date, and can see by the character of progress on his progress schedule that the work is likely to continue at the same rate of speed, he can immediately order materials to be delivered at a date prior to the date originally set.

The contention may arise that this can be done anyway, and this contention is perfectly sound; the progress schedule is not supposed to do things for the contractor which cannot be done by other means. It is, however, supposed to do things for the contractor in a way which will save the contractor both time and money. So that while the contention is sound that the work above noted can be done in another way, it cannot be done as efficiently or as inexpensively, nor can it be done with so little effort on the part of the various hands through which the orders pass.

This follows also through the problem of construction, as has been previously noted, on busy or congested streets by arranging the progress schedule and prearranging dates and times of delivery, material, men, teams and all can be at hand at the exact moment required.

Countless times during the course of construction of buildings the contractor or his foreman has been on the site of the building and has asked the question: "Where are the teams to do this or do that?" or, "Where are the floor construction men that were to be here to-day?" The answer in the majority of these cases is that the notification had come to them at such a short time in advance that they had not been able to get their material and men together so as to appear promptly. This contingency can be avoided by a proper use of the progress schedule.

The effect of the progress schedule in controlling the work of sub-contractors is one of its most important functions to the general contractor. The condition is frequently met where material is required at the site of the building, the preparations are already made for its installation, but no material of this particular kind is at hand. Investigation reveals the fact that the material is being prepared in a certain foundry or mill and that the mill has not yet been able to get out this particular product. This immediately becomes an incipient delay. The contractor's only recourse then is to wait until such time as the material is prepared and at hand, and the natural and inevitable consequence of this is that men are idle or employed on other parts of the work when they should be attending to this particular duty. The use of the progress schedule would absolutely eliminate conditions of this kind if it were properly and intelligently employed. Each sub-contractor would be required to have a progress schedule of a similar character to the one employed by the general contractor, and would be required to forward to the general contractor copies of this schedule from time to time which would show him at a glance the exact condition of all of the work in foundry or mill, and would enable him at once to determine whether or not the material would be forthcoming at the particular time it might be in greatest demand.

The progress schedule is of tremendous value to the general contractor in the question of dispute as to delay. If this system is accurately and consistently maintained, it will demonstrate at a glance at which portion or at which stage of the work the delay occurred, and will demonstrate beyond reasonable doubt whether or not the general contractor is entirely free from all blame in connection with this delay.

As a concrete illustration of the working of this, it might be well to refer to an actual condition which existed in connection with a building recently constructed. The general contractor in installing his foundation work, due to weather conditions and other causes, was at the time of completion of the foundations about six weeks behind his schedule; the steel work had been delivered and storage charges and railroad charges were held against the contractor. Upon completion of the whole building the contractor was eight weeks behind his original schedule. The owners claimed delay and the contractor refused to allow the claim and put in a counter claim that he had been delayed by the owners. The evidence, however, showed that the contractor was six weeks behind at the very start of the job and, inasmuch as no other legitimate claims of delay appeared, the contractor was naturally held responsible. A progress schedule demonstrated the fact that all of the other work during the course of the construction of the building had been kept up to the mark, but that the six weeks lost at the start had not been made up, and as this original delay was not due to any act of the owners, the entire responsibility rested with the contractor.

In cases where the progress schedule has been maintained, it is the custom for the general contractor shortly after the contract is signed to file with the architect a schedule of dates of commencement and completion of the various subcontracts which come directly under his control. Figure 1 shows a reproduction of such a schedule and is, in a measure, self-explanatory.

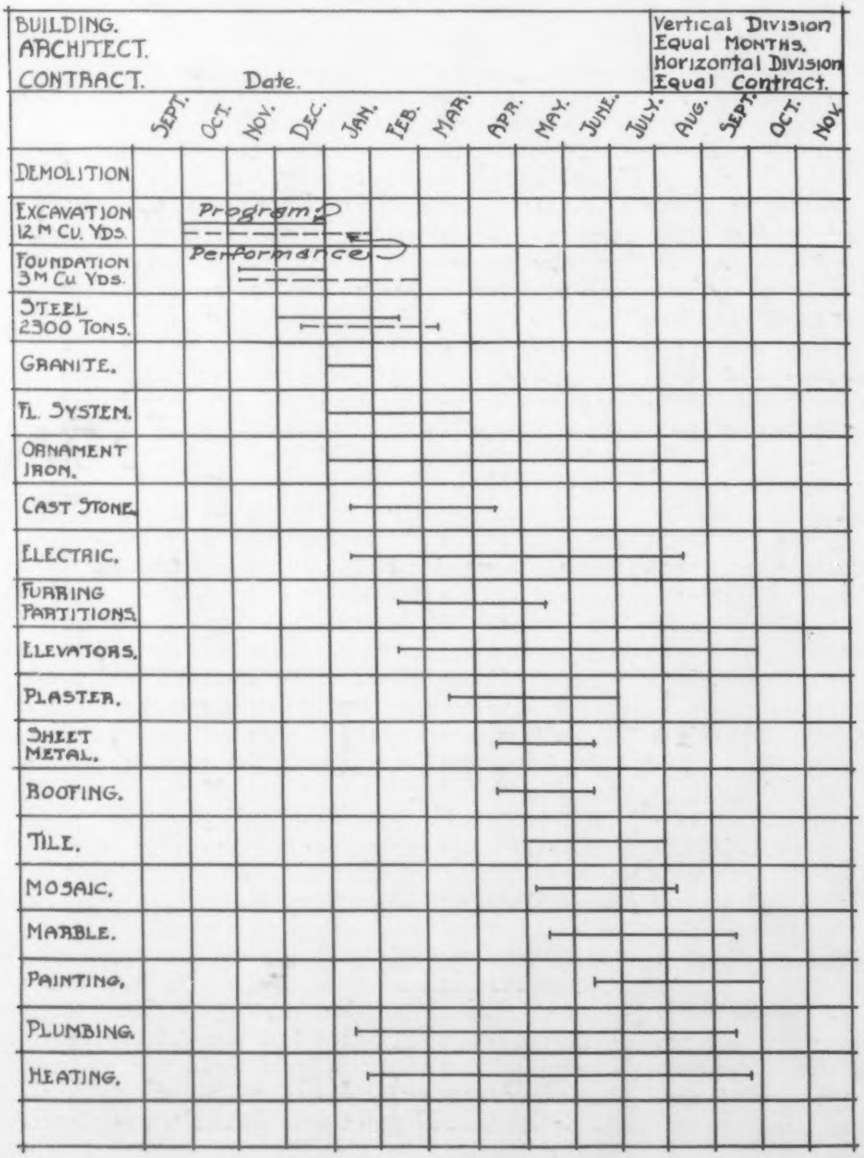


Figure 1. Type of Schedule Adaptable to Uses of the General Contractor to Indicate Completion Rather than Progress

With this as a starting point the general contractor may require from his sub-contractors similar schedules, which schedules are made parts of the contracts, and violation of the terms of the schedule are as subject to penalty as violations of the terms of the contract.

The advantage of this is sufficiently obvious, in that the general contractor has a continuous control over all of the efforts of the sub-contractors, both in the shop, the mill, and foundry, as well as at the building.

After the filing of the progress schedule with the architect by the general contractor, the architect arranges his own form of schedule, which he maintains independently of the schedule maintained by the general contractor. The general contractor, however, at the building arranges with his time clerk to check off day by day the various items as they appear in the nature of progress at the building.

This schedule may be kept on a transparent medium such as tracing cloth, and blueprints from time to time may be made from this original and sent to the architect and owner as a progress report.

In addition to the recording of work at the building, this progress schedule may be employed to the extent of noting and checking the receipt and delivery of drawings and other important information.

The general contractor, as a rule, does not recognize the fact that after the contracts are awarded to him, a certain amount of time is necessary for the architects to study and prepare the finished details and other explanatory drawings. The result frequently is encountered that the general contractor will make the claim, as sustaining his contention that he is not responsible for delays, that the architect did not give him information in time, or did not supply him at proper times with drawings. The architect, on the other hand, would naturally controvert this claim by the statement that the drawings had been properly delivered, and without a proper system on the part of both the architect and the contractor it would be pretty difficult to arrive at the correct solution of this problem. The progress schedule, however, would enable the contractor to follow carefully this part of his work — and the receiving of drawings and information, as well as the imparting of such information as may be necessary, is as much a part of the general contractor's work as the receiving of a steel beam — in such a manner that a record of drawings can be accurately and consistently kept, and thus entirely eliminate any possibility of argument from the standpoint of delay due to tardy information.

It is also advisable at the time of signing the contracts for the contractor, in giving his progress schedule to the architect, to receive from the architect a similar schedule of drawings to be delivered. This the contractor should insist upon, as he may then make his plans for the disposition of certain parts of the work with greater accuracy than would be possible if he had no idea as to when drawings and details of certain portions of his work would be available. Not only for himself is this schedule an advantage, but also for his various sub-contractors. The mill man may be anxious for details in order to get out his frames; the general contractor can merely say that he has not yet received the drawings and is not positive when he will get them, but will forward them to the mill man as soon as possible; whereas, if a schedule of

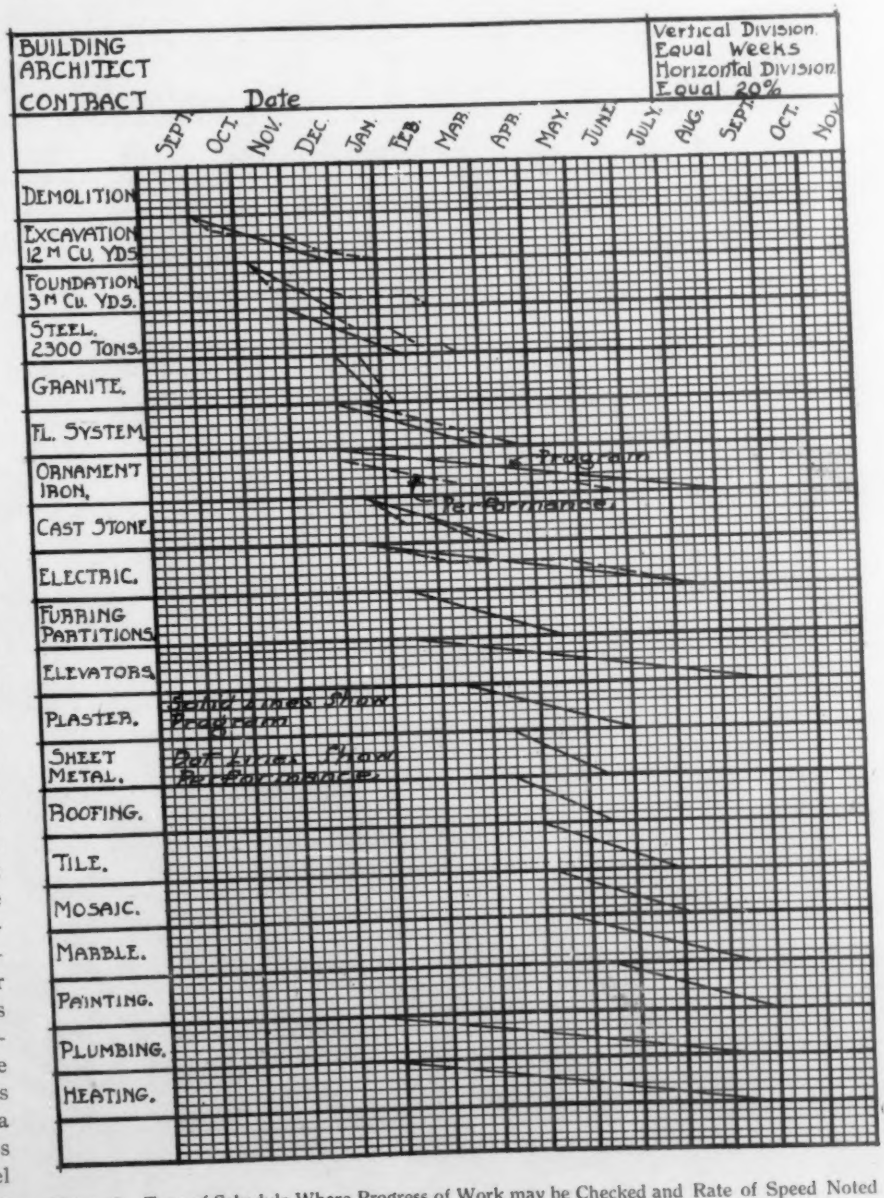


Figure 2. Type of Schedule Where Progress of Work may be Checked and Rate of Speed Noted on Various Contracts

drawings were maintained, he could notify his mill man as soon as the contracts were made that the drawings would be delivered to him on such a date. In this manner all of the different contractors interested in the completion of the building would be apprised in advance of the dates when their information should be forthcoming, so that they might proceed with their work without delay.

In arranging a schedule which is available for a general contractor and for a general contractor alone, there are many items which do not enter into the schedules of the various sub-contractors. On the other hand, the fundamental underlying principle is the same, and the efficient service a progress schedule will afford a general contractor is afforded to the sub-contractors in the same relative degree.

The illustration, Figure 1, indicates the type of progress schedule which is adaptable to the uses of the general contractor and is such a schedule as he would work out for consultation with the architects or owners. The disadvantage of this particular type, as will be readily seen, lies in the fact that the contractor cannot check proportionate progress of work. It does, however, give the limiting dates within which times certain contracts or sub-contracts or portions of the work are to be done, and if a progress schedule of this character is made a part of the contract or the specifications, it would become, within reasonable limits, a binding agreement.

In this type of progress schedule the heavy vertical subdivisions represent units such as months and the lighter sub-divisions represent weeks or proportionate parts of the larger units. The horizontal lines may indicate proportion of work completed, but with this particular type the proportionate part is a little less readily indicated than in a type to be noted later.

Figure 1 illustrates the manner in which this record may be kept as a contractor's record, indicating completion rather than rate of progress. The heavy horizontal lines indicate the duration of each individual sub-contract, the beginning of the line representing the starting date and the end of the line representing the date of completion. The broken dotted line, which is noted to indicate how this schedule may be maintained, indicates the actual duration of the time of the contract, the starting point being date of commencement and the end of the line being date of completion.

This particular type of schedule is of use more as a record than as an actual check on the progress, and would be a convenient form to file for future reference after a building has been completed, but is not the highest type of progress schedule for current work. An illustration of a better type is given in Figure 2.

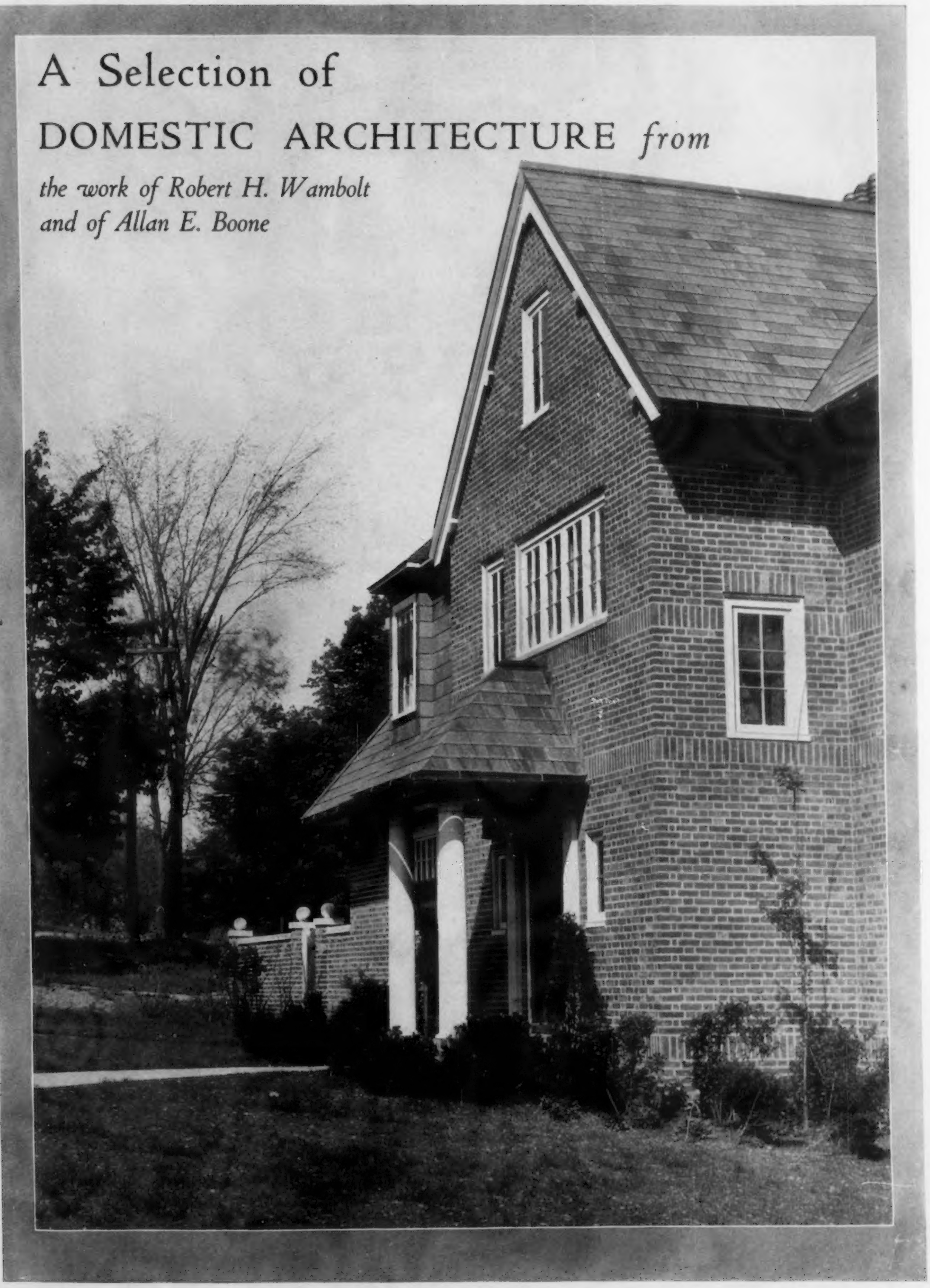
Figure 2 represents a modification of the former type and indicates in a measure how progress may be checked and rate of speed noted. This type, however, is not sufficiently flexible to serve all its purposes to the best advantage. It will be seen by comparing the lines indicating the prearranged schedule and the actual progress that the proportion of work done during any interval of time which indicates the rate of speed is more clearly defined than in the previous illustration, but a later schedule will show a still greater improvement on this particular type.

In Figure 2 the lighter vertical sub-division, as has been previously noted, indicates weeks and the lighter horizontal line indicates proportions of the total contract. The heavy solid line indicates the duration of the contract as prearranged by the contractor. The dotted line indicates the actual beginning, end, and duration of the work, and shows the relative progress. Reference to this illustration will show how readily the progress of the work may be noted, and also how readily may be noted the exact interval of time during which nothing was done on the particular contract in question. This point alone may be of vital importance.

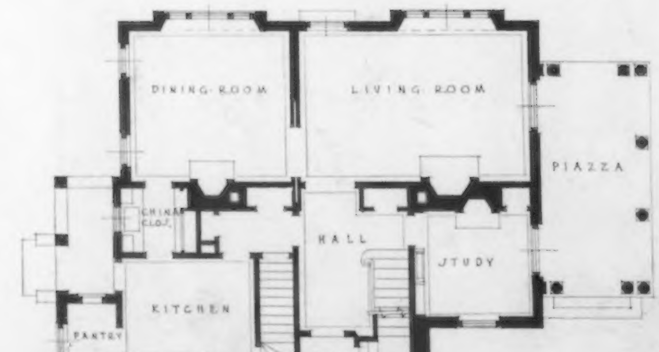
This subject of progress schedule can be applied to the sub-contractor as readily as to the general contractor and with equal efficiency in assisting in the preparation of work and in the execution of the actual contracts.

It might also be permissible to call attention to the fact that a schedule of this character is equally applicable to any manufacturing enterprise. The systematic record of progress is not necessarily confined to architecture or building construction alone, but an analogy can readily be drawn between the output of a manufacturing establishment and the foundry of a sub-contractor in building construction; for example, in a mill producing woolen goods a progress schedule record could be kept as efficiently and to as good purpose as in a mill producing interior finish in connection with a building enterprise. This type of schedule would show the date that orders are received, the various sub-divisions of the work from the selection of the different kinds of material used to the packing and shipping of the finished product, the date of actual commencement of work on these orders, the progress of various portions of the work, and the date of delivery of the completed order. The question may arise as to what value this would be in an establishment of this character; but it seems sufficiently obvious that the head of the company, if he so desire, can by the assistance of the progress schedule, tell at a glance the rate at which orders are being executed, the way in which promises of delivery are being kept, and the amount of work that is being turned out by the various departments in an equal space of time. This, however, is not in the realm of architecture or construction and need not be further considered except as an analogy.

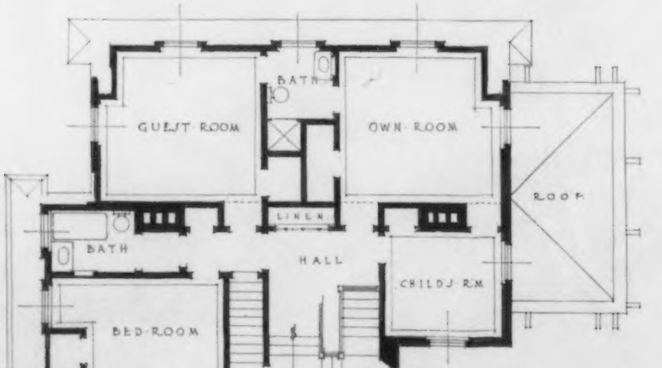
A Selection of
DOMESTIC ARCHITECTURE *from*
the work of Robert H. Wambolt
and of Allan E. Boone



VIEW FROM STREET



FIRST FLOOR PLAN

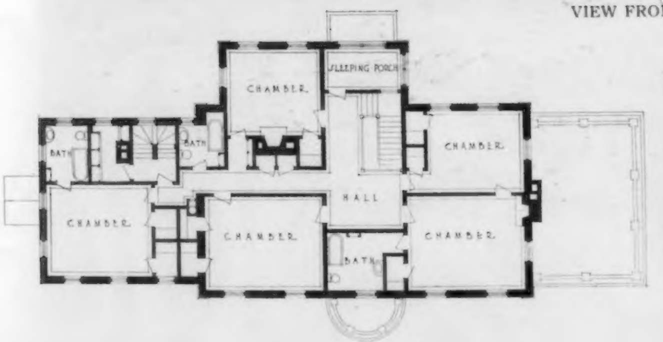


SECOND FLOOR PLAN

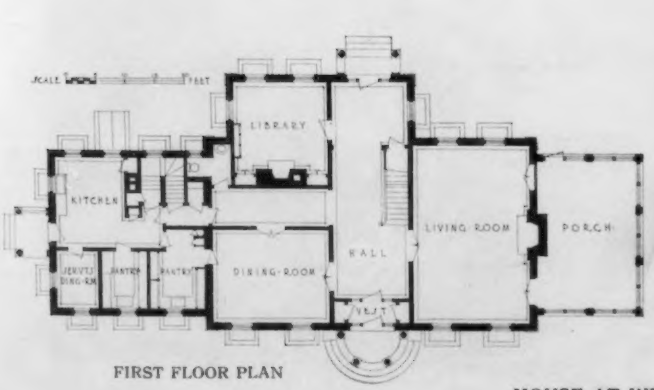
RESIDENCE OF WM. CRANE, JR., ESQ., WATERTOWN, MASS.

ROBERT H. WAMBOLT, ARCHITECT

VIEW FROM STREET



SECOND FLOOR PLAN



FIRST FLOOR PLAN

DETAIL OF ENTRANCE

HOUSE AT WINCHESTER, MASS.

ALLAN E. BOONE, ARCHITECT

VIEW OF STAIR HALL

VIEW OF LIBRARY

HOUSE AT WINCHESTER, MASS.

ALLAN E. BOONE, ARCHITECT

Three New College Buildings.

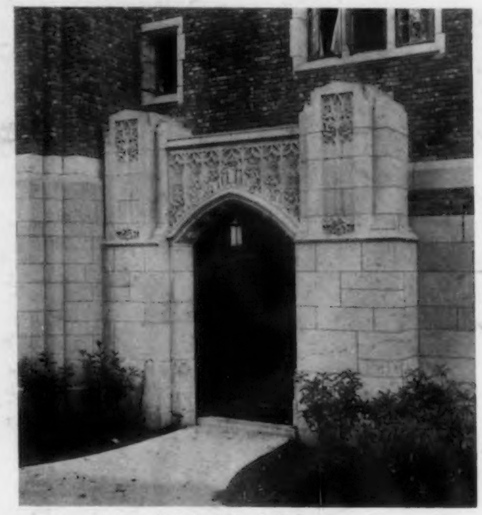
SKINNER RECITATION BUILDING AT MT. HOLYOKE COLLEGE, PUTNAM & COX, ARCHITECTS.
CENTRAL DORMITORY AT WELLESLEY COLLEGE, COOLIDGE & CARLSON, ARCHITECTS.
MARTHA COOK BUILDING AT THE UNIVERSITY OF MICHIGAN, YORK & SAWYER, ARCHITECTS.

IN the architecture of American colleges a certain tradition seems to be establishing itself in the free use of the forms of English collegiate, or Tudor architecture. There are, of course, several exceptions to be found in places where an older and already firmly established precedent exists, as in the well-known example of Harvard University, where the recognized charm of the Colonial work in Harvard yard has been followed in all of the later buildings, with the exception of those two or three which were built during the architectural gloom of the early and middle nineteenth century.

The three buildings illustrated in this issue are among the latest educational buildings to be finished, and in each case the English collegiate style has been adopted. All three, moreover, are for the accommodation of girl students, and used either as dormitorie sor for recitation purposes.

The recitation building recently completed at Mt. Holyoke College was the gift of Messrs. Joseph and William Skinner, and provides, in addition to class rooms, a faculty social room, a literature room, and several small offices for instructors. It is placed on the campus, some distance back from the main street which borders the college grounds.

A rough textured brick of varying tones of red has been used, laid without any pattern and with a wide raked joint. The trim is principally limestone, although brownstone has been used for the moulded water table, and goes far in relieving the solid color of the walls. The roof is of variegated green and purple slate. Steel casements with steel sash and frames have been used throughout. The construction is fireproof, the framing being steel and the floor slabs concrete, only the roof being of wood. The finish on the interior, in general, is of plain white oak, although in the faculty social room and the literature room there is quartered oak.



Detail of North Doorway
Central Dormitory, Wellesley College

View of Tower from the North
Central Dormitory, Wellesley College

No provision has been made for heating apparatus, since steam is brought from a central plant outside the building; in fact, most of the basement is now unfinished, the rooms being indicated on the plans according to their future purposes.

At Wellesley College a fire recently destroyed the large central building which housed about two hundred and fifty students, and in addition contained almost all of the class rooms of the college. There was thus an urgent need of temporary quarters and accordingly there was built in something like thirty days a very convenient class-room building which probably will be used for years to come.

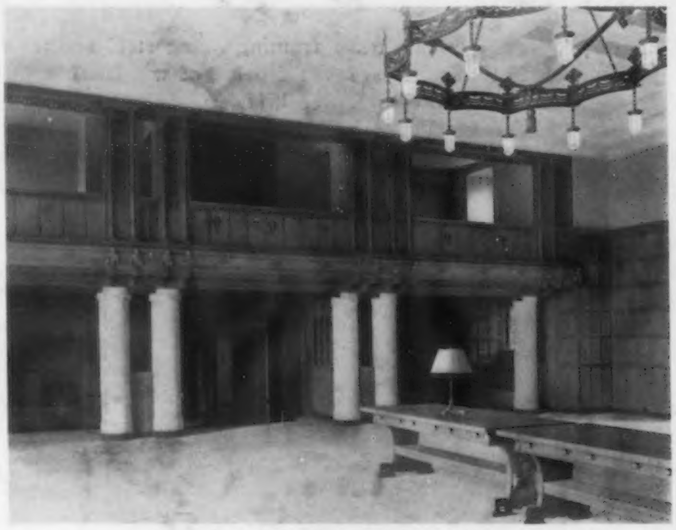
The next step was to raise funds for new and permanent buildings, and among others approached was a so-called "Mr. Smith," who replied to the request for a contribution by asking whether the college had any definite policy in regard to this development, and a plan which showed how they intended to carry it out. When the authorities were forced to admit that they had not had time to work out any such ideas, "Mr. Smith" said he was not interested until a plan was developed. This was a most important decision and one that donors to other colleges might well take as a precedent.

The plan once made and approved by the trustees of the college, "Mr. Smith" offered to give the central building of the College Hill group; this is a dormitory for two hundred girls,

which has been completed at a cost of about $500,000. Since, on first consideration, this cost may seem large, it should be explained that in addition to the regular dormitory accommodations in a fireproof building, there is also included a series of reception rooms which are intended to become the social center of the college. This necessitated a more elaborate interior and a larger building than for a simple dormitory, and, of course, increased the cost.

The college had established, up to this time, an accommodation unit providing for about one hundred girls in each dormitory, although out of this were always taken rooms for five or six teachers, a room for the head of the house, and a guest room; while the tendency, as far as possible, seems to be to group a smaller number of girls in a building rather than to increase their number, yet in the matter of food and service one hundred seems to be an economical unit. It was decided, since this building must accommodate two hundred girls, it should resolve itself into what may be called a double house, each half containing one hundred girls; and that these girls should meet on common ground in the dining room and living rooms, but that otherwise they should form separate units, having their own heads of houses, their own reception rooms, and being as independent of one another as though living in separate buildings.

The central dining room called for one common kitchen, both of which have been located in the basement. An interesting feature of the plan is that the service, not only for this building, but for the two other dormitories on the hill, is entirely underground and reached from a lower level, so that the grocers', butchers', and other service teams have no reason for entering the quad of the hilltop itself, but use the service court on a lower level.



View in Living Room, Showing Balcony and Alcoves
Central Dormitory, Wellesley College

In the examination of the remains of the old building it was found that the exterior walls had been made of excellent water-struck brick, the effect of which had been entirely ruined when they were laid, years ago, by reducing the joints to a hair line. By using those which were still in good condition, with wider joints and adding new black headers, one to every other brick in every other course, the architects have obtained

Fireplace in Dining Room

Detail in Living Room

Central Dormitory, Wellesley College, Wellesley, Mass.
Coolidge & Carlson, Architects

an entirely happy result and have added the sentimental value of knitting into the new building some of the old. The exterior stonework is an artificial product made with a white marble aggregate giving an agreeable color.

The interior finish throughout is of oak, no wood having been used, however, around the windows, where there is only the stone trim with the steel casements set in. The walls of the bedrooms are covered with burlap, so that pins can be stuck where the girls may desire. Each bedroom has a large chest seat in front of the window, a large closet, and on the closet door a full-length mirror. The lighting of the bedrooms is arranged so that there is a general overhead light, controlled by a switch near the door, and also a plug on each of two sides of the room, so that it is possible also to have table lamps. The floors of the dining room, corridors, and stairs are of cork applied directly to the reinforced concrete slabs, and are laid in 6 inch by 12 inch basket weave pattern of tiles.

View in Small Parlor
Martha Cook Building, University of Michigan

The toilets are so arranged on each floor that no girl has to walk more than 50 feet to reach one. The partitions and floors are all of honed terrazzo. The plumbing is installed on the basis of one lavatory, one water closet, and one tub to every five girls; if ten girls are to use the same toilet rooms, then the second bath tub is changed to a shower; and since the toilets are arranged for minimum groups of ten each, there is always at least one shower in each bathroom.

The heating is by an overhead low pressure system supplied from a central power house. The main rooms of the first floor and of the basement are heated by a fan system, the air being humidified by water washing. The kitchen has electric ranges and other general cooking equipment, the various kettles, however, being heated by steam.

In the basement, and easily reached from the main part of the house, there is a laundry with six tubs and a drying room, so that the girls may do their own laundry work if they so wish. In connection with the service entrance there is an office where the food and various other supplies, as well as express packages, may be received and checked. The basement also contains large storage places and is of sufficient height, so that a mezzanine may be added later if required. The trunks are stored in the attic where they may be reached easily.

At the University of Michigan the latest step in providing for the girl students is the residence hall known as the Martha Cook Building, and erected as a memorial gift to the university. It is one of a contemplated group of four buildings, all similar, and each to accommodate about one hundred students. Although not on the campus proper, it is immediately across the street from the main buildings and takes its place well as a part of the complete university group.

The dormitory floors are interesting in that they are so planned that the bedrooms although single are arranged in groups or suites of two or three with a private wash basin for each suite. This scheme, besides allowing flexibility, has the added advantage of making for quiet, since practically every room is thus separated from the corridor by two doors. There is also on each floor a general study room which, with a fireplace and special furnishings, affords an attractive retreat, while a small kitchen adjoining the study gives the the girls an opportunity to serve light collations.

On the top floor there is a convalescent and hospital suite with a special diet kitchen so that any sickness, other than very serious cases, may be cared for right in the building.

View in Dining Room
Martha Cook Building, University of Michigan

On the first floor

are the usual general rooms — the parlors, dining room, and kitchen — and a living suite for the warden as well as a room for the housekeeper and a guest room. The small alcoves indicated on the plan as lobbies are really small reception rooms used for the entertainment of guests. An especially interesting feature of this floor is the long corridor which, with its comfortable furniture and pleasant outlook, practically serves as a living room.

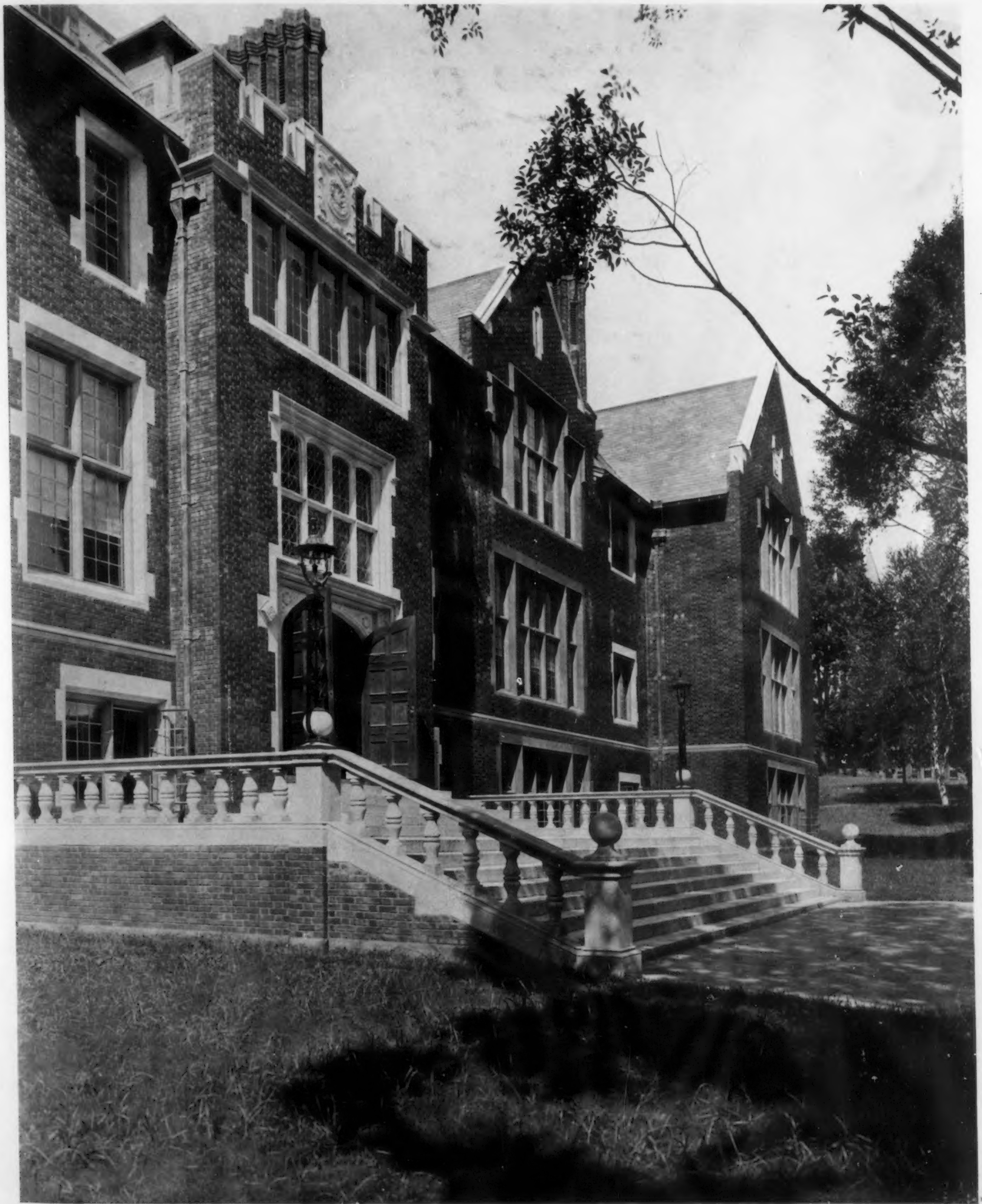
The paneling is, in general, of American oak, although Philippine teakwood has been used in the large parlor and butternut in the small parlor. The floor of the corridor is of tile set within marble borders; the other floors in the principal rooms are of cement, except in the dining room, where a cork tile has been used. The ceilings of ornamental plaster are tinted an ivory tone. A great deal of care and attention has been given to the furnishings, not alone to have them harmoniously in good taste, but they have been especially made in the expectation that they will thus stand long usage.

Detail Showing Dining Room Windows
Martha Cook Building, University of Michigan

The exterior of the building is of red brick with limestone trimmings, while the roof is slate. The carving of the quite Gothic main doorway and of the bosses which enrich the mouldings at the third story window heads is worthy of particular notice. The terrace extending along the inner side of the building is an interesting feature in that it provides an out-of-doors sitting place which will undoubtedly be greatly appreciated during the warmer months of the school year.

The whole effort in the somewhat free spending of money on this building was to create an atmosphere of solid substantiality, in the realization that such surroundings must have a healthy influence on the minds of the students at a time when such an influence is most necessary.

View Showing Terrace Side
Martha Cook Building, University of Michigan, Ann Arbor, Mich.
York & Sawyer, Architects

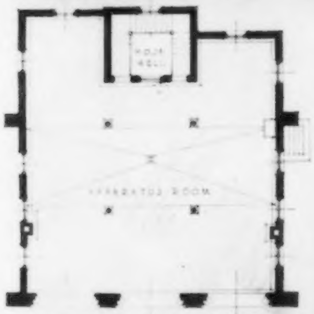


ENTRANCE ON CAMPUS FACADE

SKINNER RECITATION BUILDING, MT. HOLYOKE COLLEGE, SOUTH HADLEY, MASS.

PUTNAM & COX, ARCHITECTS

VIEW OF STREET FACADE



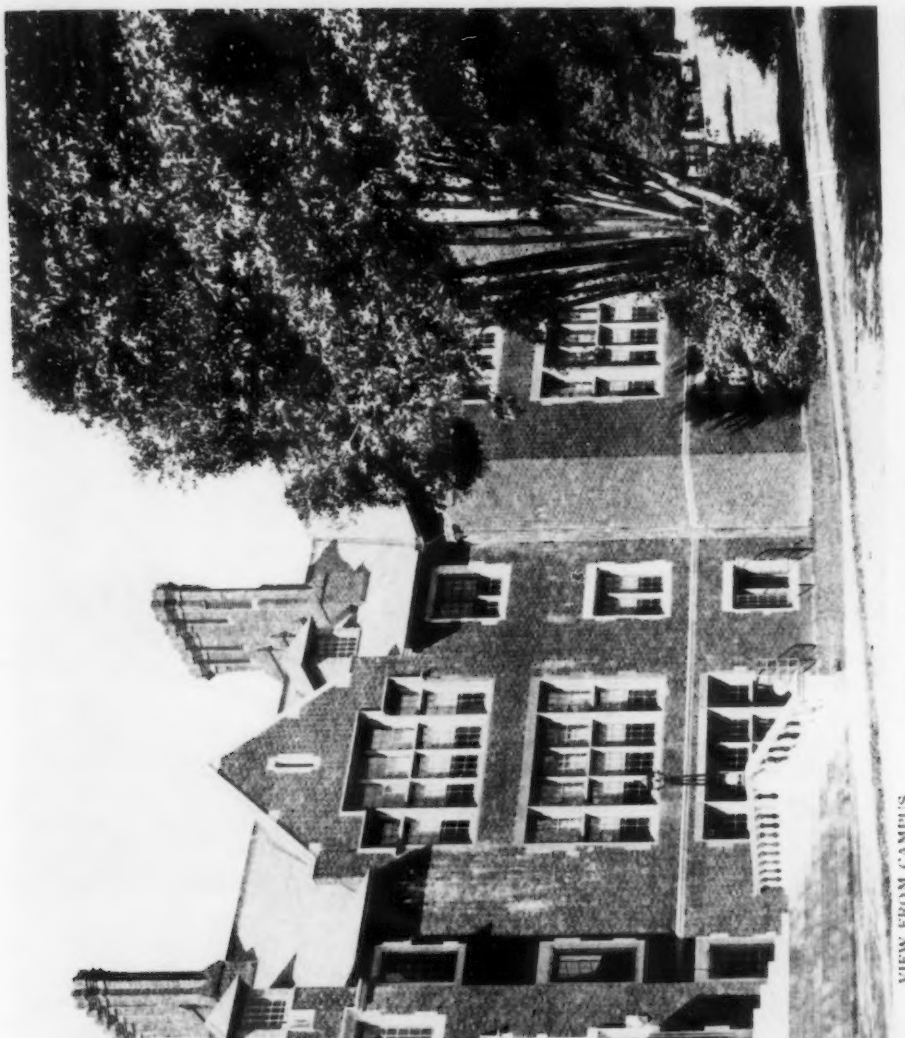
FIRST FLOOR PLAN · SCALE FEET

SECOND FLOOR PLAN

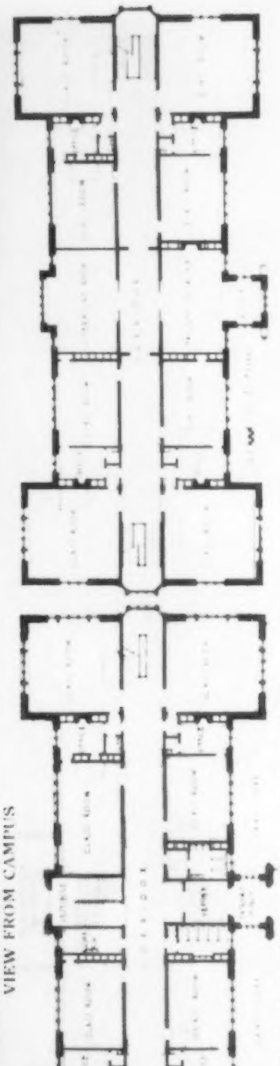
VIEW OF REAR SHOWING HOSE TOWER

FIRE STATION, WESTON, MASS.

ALEXANDER S. JENNEY, ARCHITECT



VIEW FROM CAMPUS



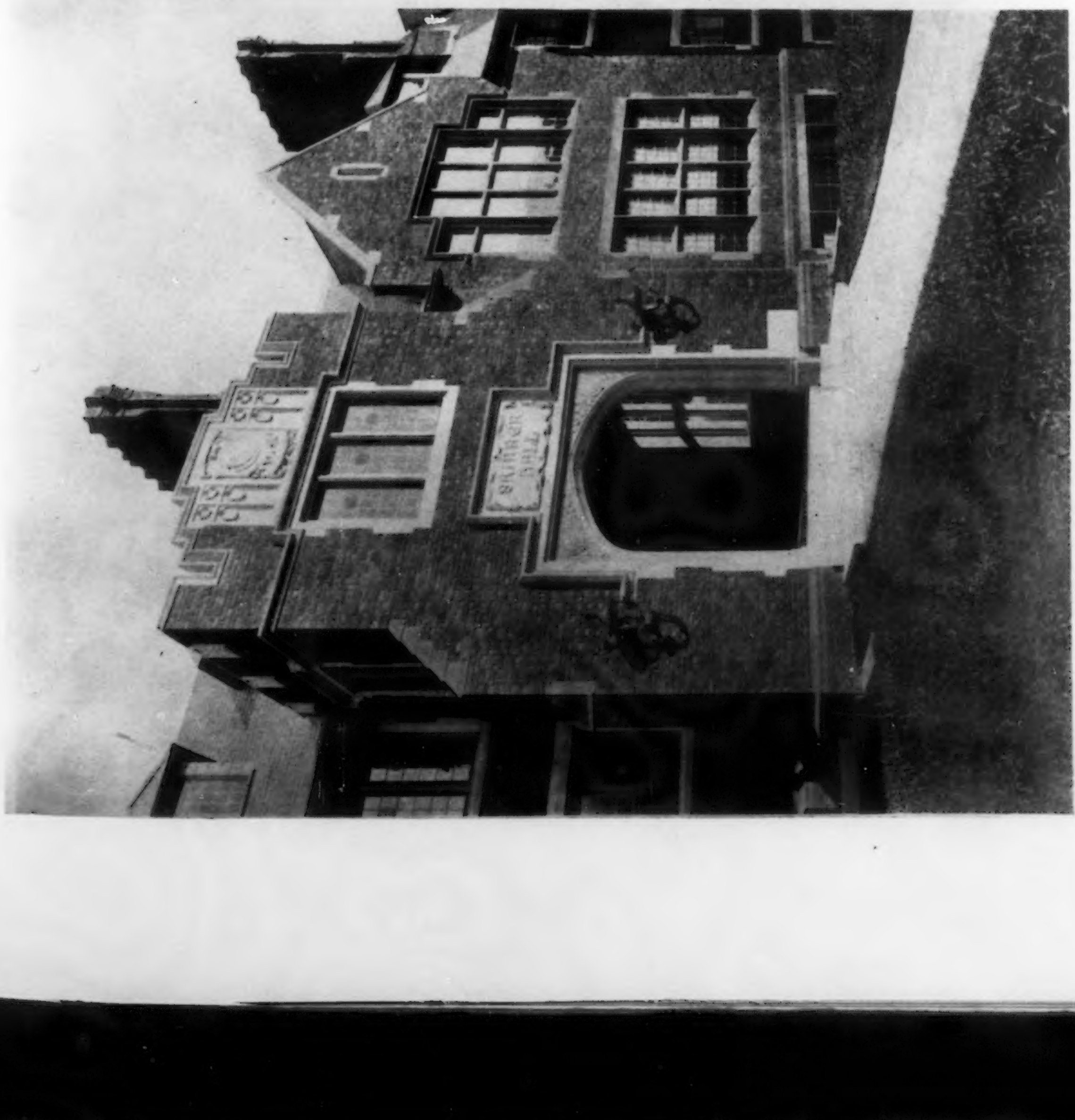
BASEMENT FLOOR PLAN

FIRST FLOOR PLAN

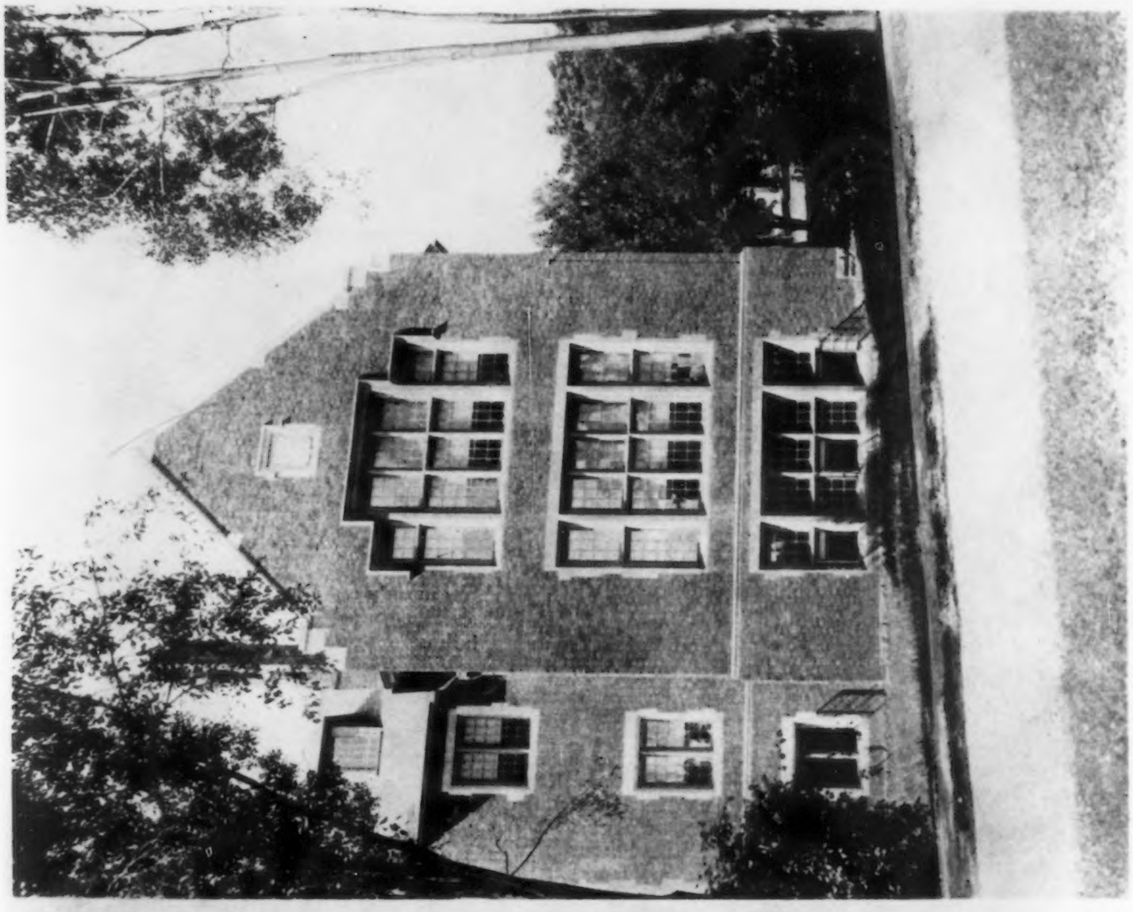
SECOND FLOOR PLAN

SKINNER RECITATION BUILDING, MT. HOLYOKE COLLEGE, SOUTH HADLEY, MASS.

PUTNAM & COX, ARCHITECTS



MAIN ENTRANCE PORCH



DETAIL OF END WING

SKINNER RECITATION BUILDING, MT. HOLYOKE COLLEGE, SOUTH HADLEY, MASS.

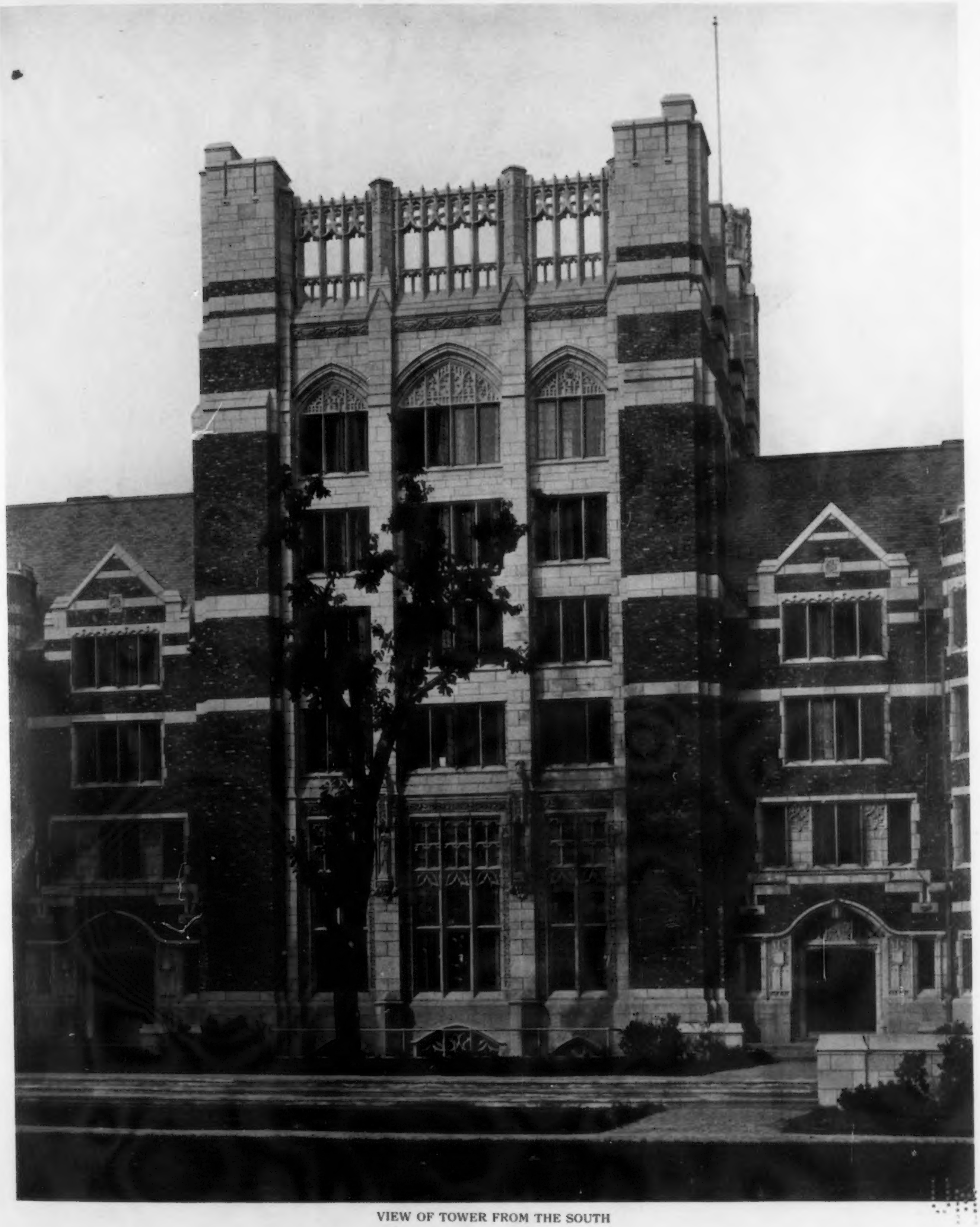
PUTNAM & COX, ARCHITECTS

VIEW FROM STREET

FACULTY SOCIAL ROOM

SKINNER RECITATION BUILDING, MT. HOLYOKE COLLEGE, SOUTH HADLEY, MASS.

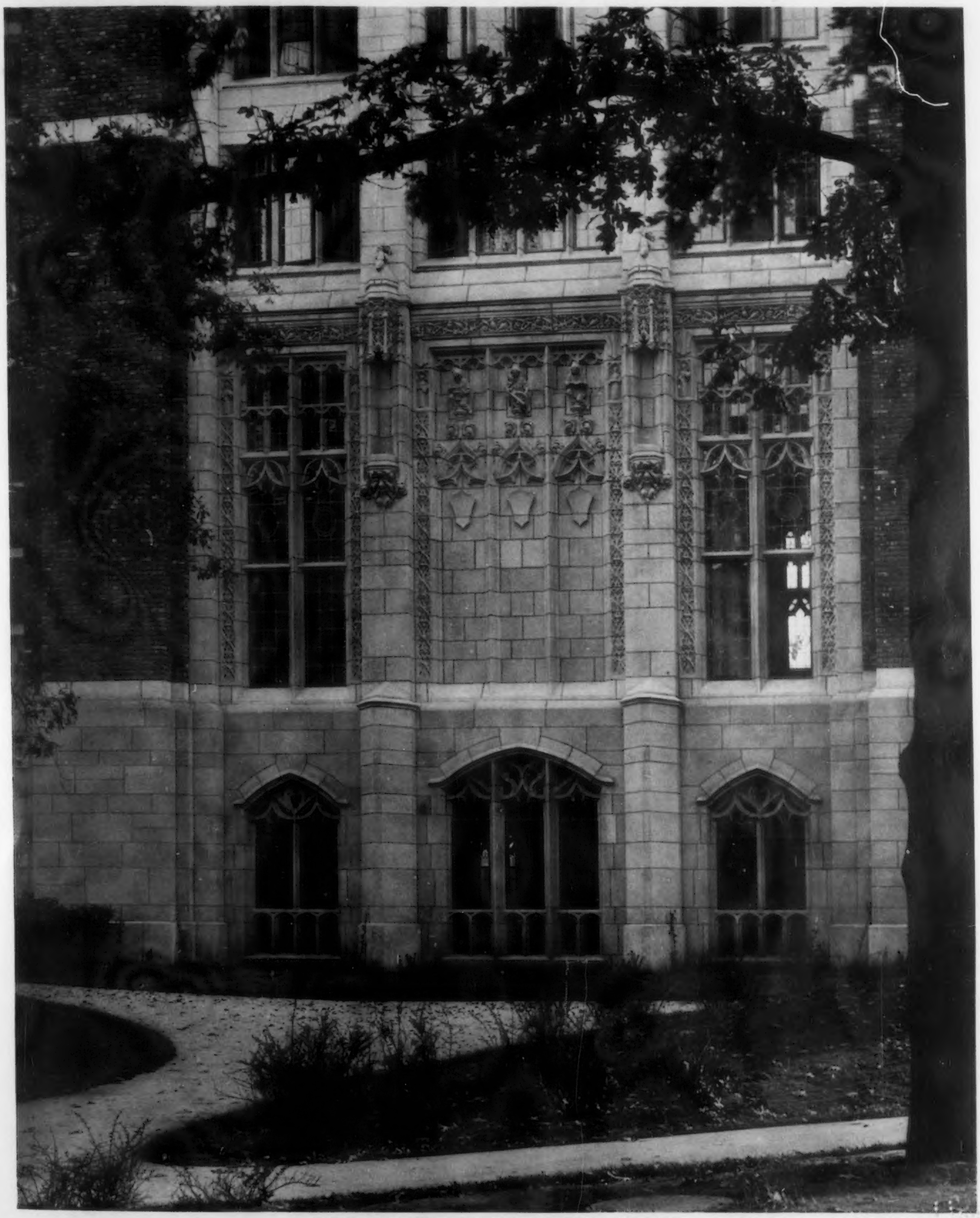
PUTNAM & COX, ARCHITECTS



VIEW OF TOWER FROM THE SOUTH

CENTRAL DORMITORY, WELLESLEY COLLEGE, WELLESLEY, MASS.

COOLIDGE & CARLSON, ARCHITECTS



DETAIL OF LOWER STORIES ON NORTH SIDE OF TOWER

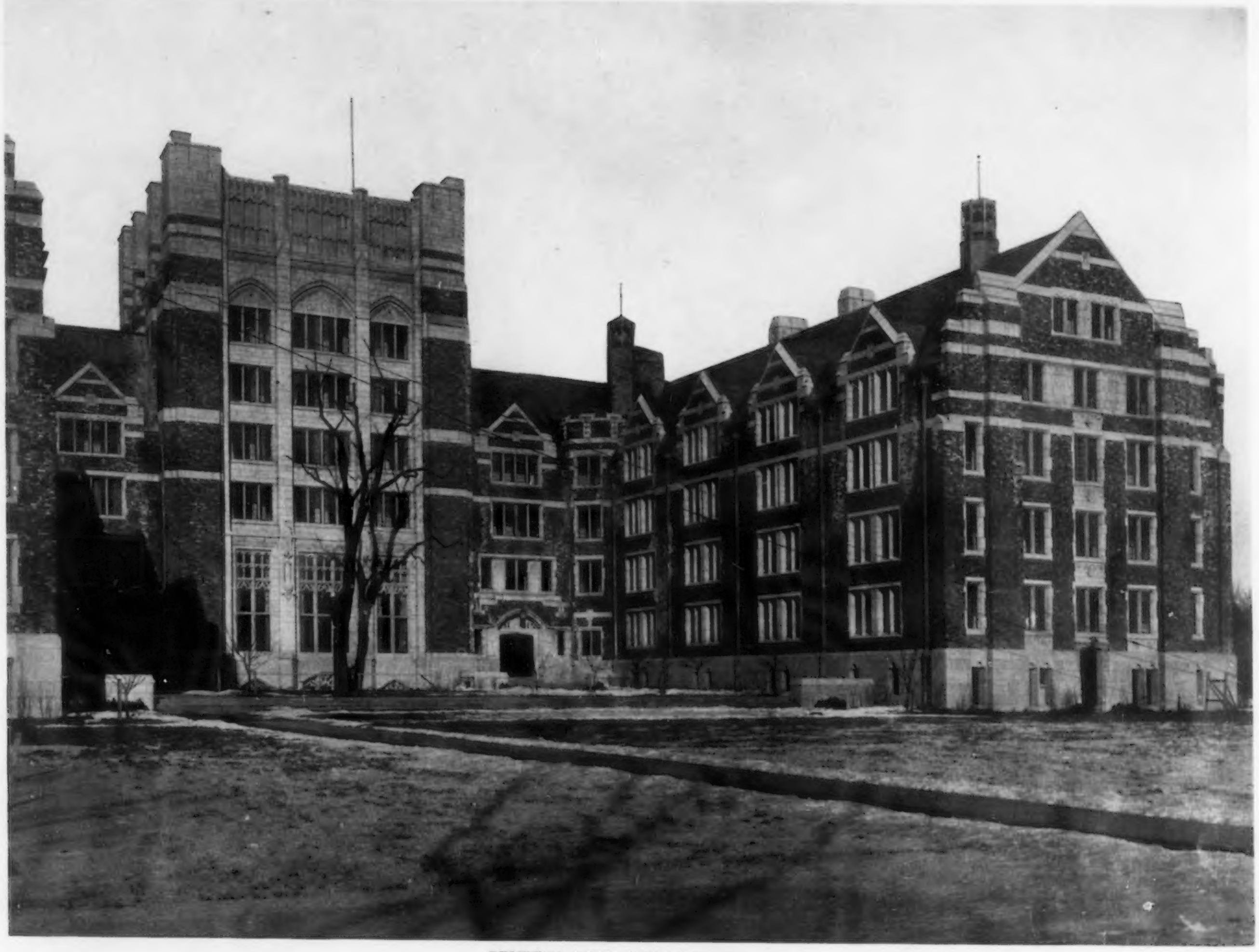
CENTRAL DORMITORY, WELLESLEY COLLEGE, WELLESLEY, MASS.

COOLIDGE & CARLSON, ARCHITECTS

ENTRANCE ON SOUTH FACADE

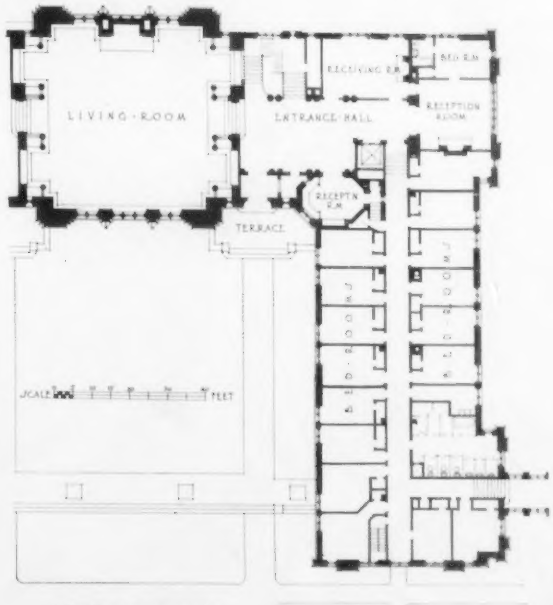
CENTRAL DORMITORY, WELLESLEY COLLEGE, WELLESLEY, MASS.

COOLIDGE & CARLSON, ARCHITECTS



GENERAL VIEW FROM THE SOUTH

BASEMENT FLOOR PLAN

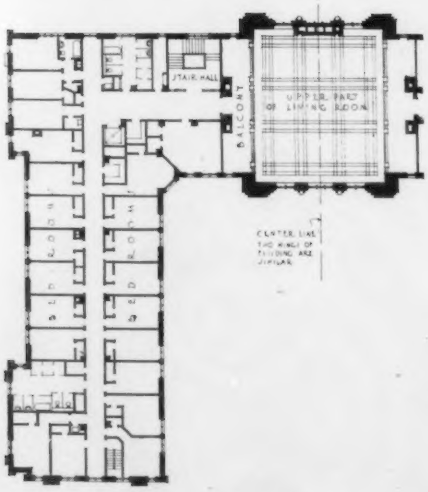


FIRST FLOOR PLAN

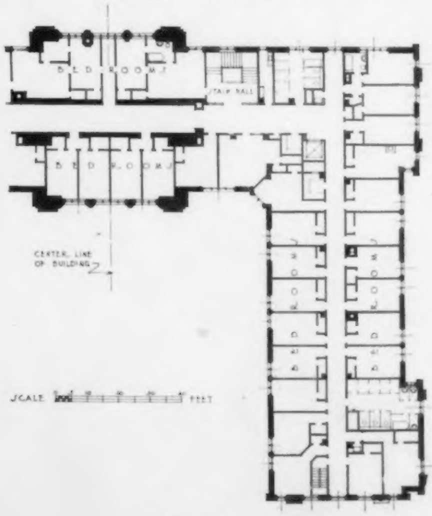
CENTRAL DORMITORY, WELLESLEY COLLEGE, WELLESLEY, MASS.

COOLIDGE & CARLSON, ARCHITECTS

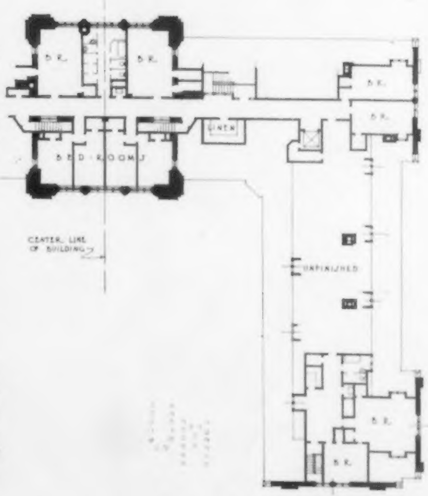
GENERAL VIEW FROM THE NORTH



SECOND FLOOR PLAN



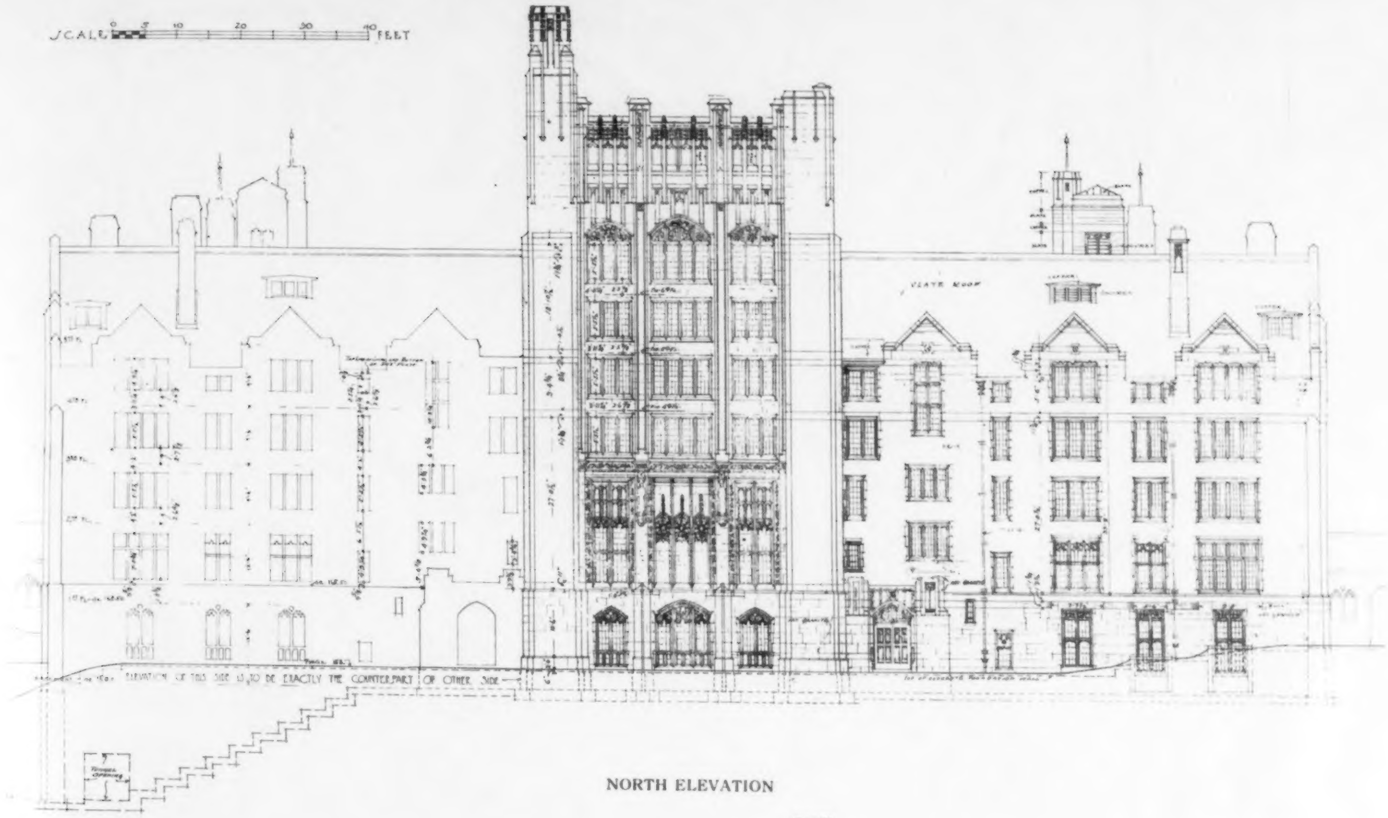
THIRD FLOOR PLAN



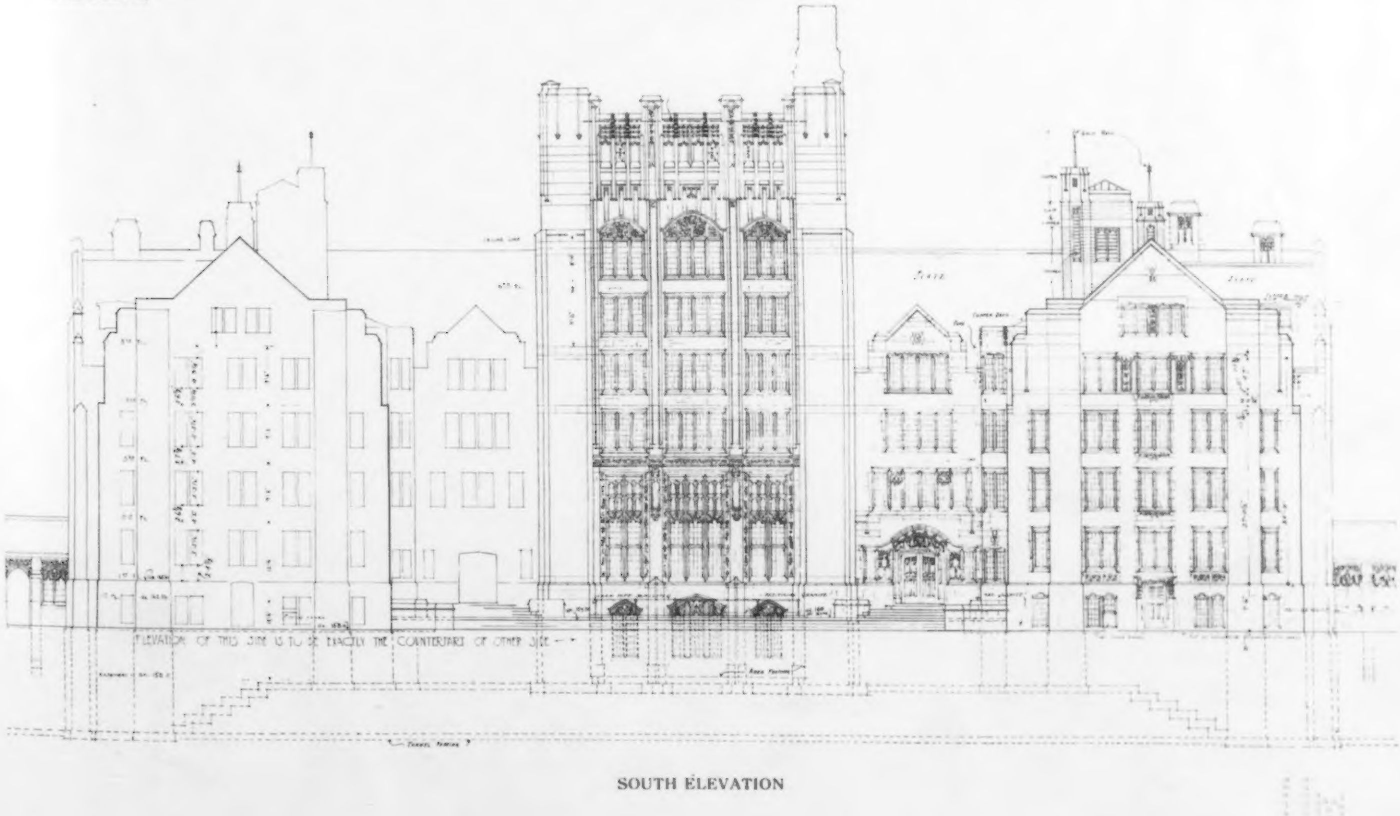
FIFTH FLOOR PLAN

CENTRAL DORMITORY, WELLESLEY COLLEGE, WELLESLEY, MASS.

COOLIDGE & CARLSON, ARCHITECTS

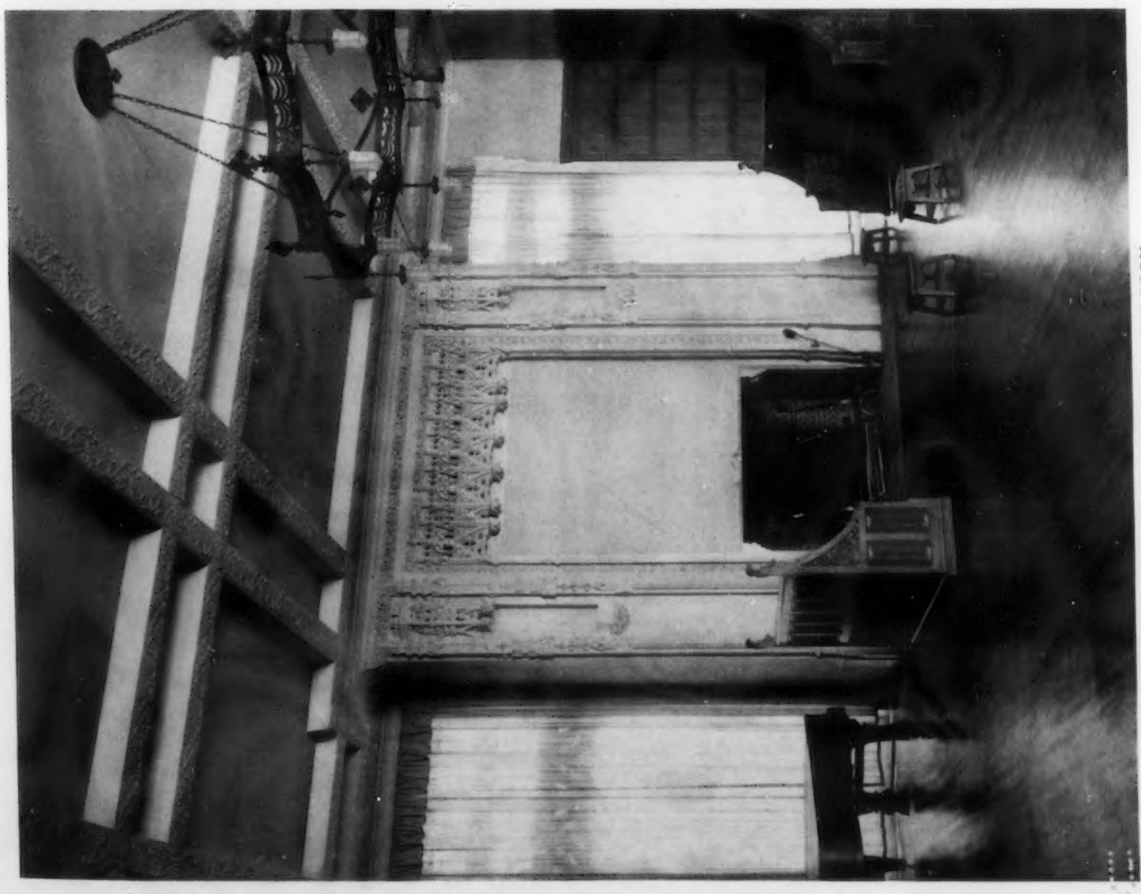


NORTH ELEVATION



SOUTH ELEVATION

CENTRAL DORMITORY, WELLESLEY COLLEGE, WELLESLEY, MASS.
COOLIDGE & CARLSON, ARCHITECTS



VIEW SHOWING FIREPLACE IN LIVING ROOM

VIEW SHOWING BALCONY IN LIVING ROOM

CENTRAL DORMITORY, WELLESLEY COLLEGE, WELLESLEY, MASS.

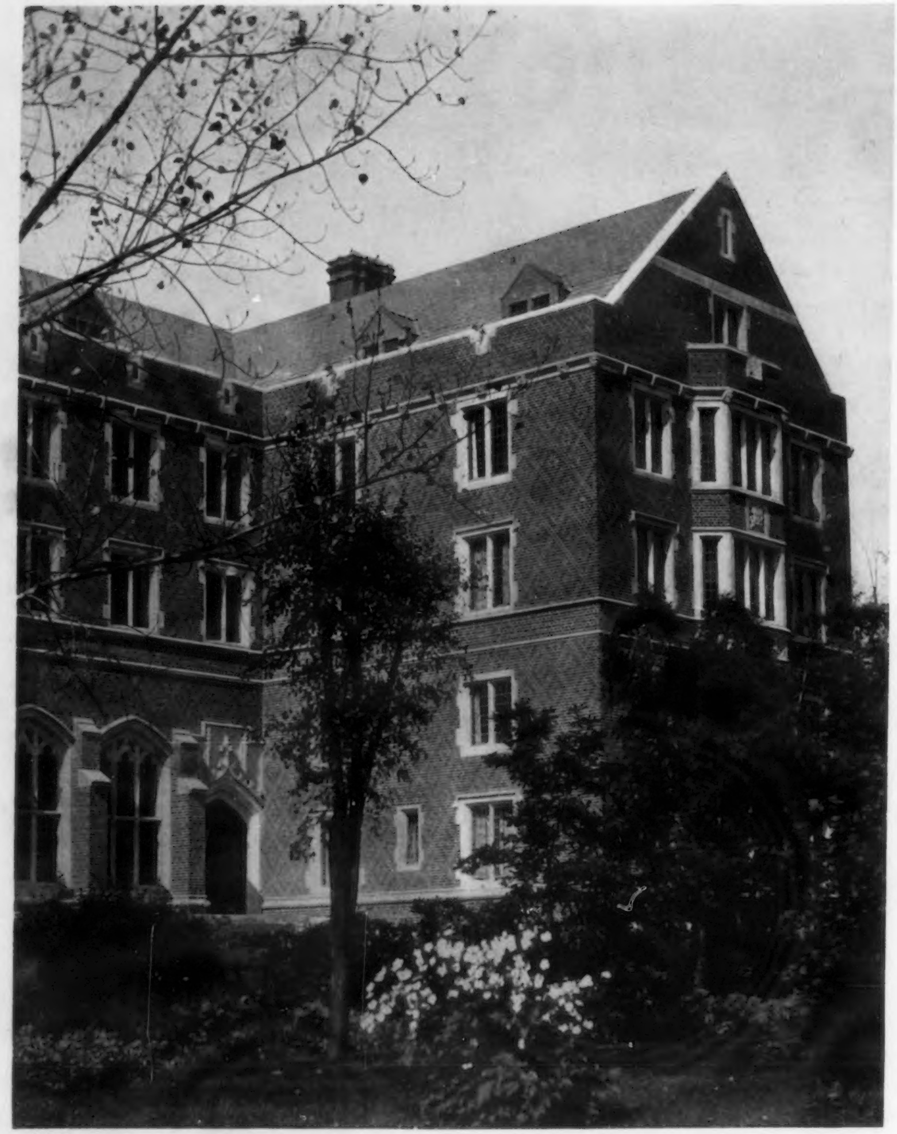
COOLIDGE & CARLSON, ARCHITECTS

VIEWS OF TWO OF THE RECEPTION ROOMS

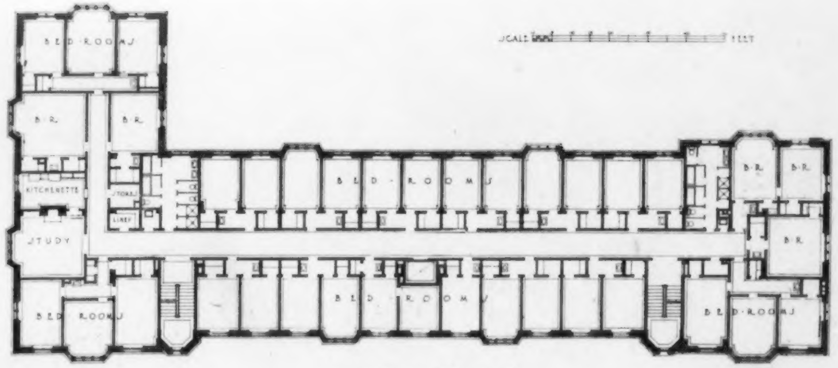
CENTRAL DORMITORY, WELLESLEY COLLEGE, WELLESLEY, MASS.

COOLIDGE & CARLSON, ARCHITECTS

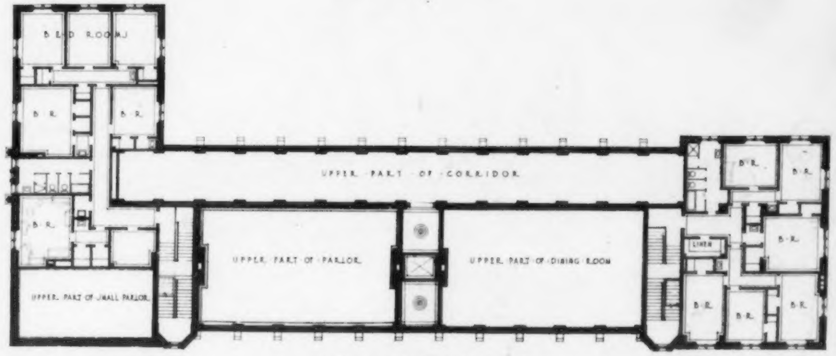
MARTHA COOK BUILDING, UNIVERSITY OF MICHIGAN, ANN ARBOR, MICH.
YORK & SAWYER, ARCHITECTS



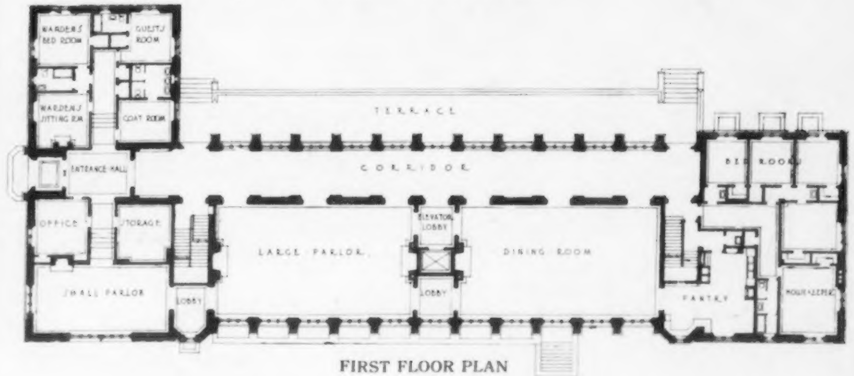
VIEW SHOWING SIDE ENTRANCE



SECOND FLOOR PLAN



MEZZANINE FLOOR PLAN

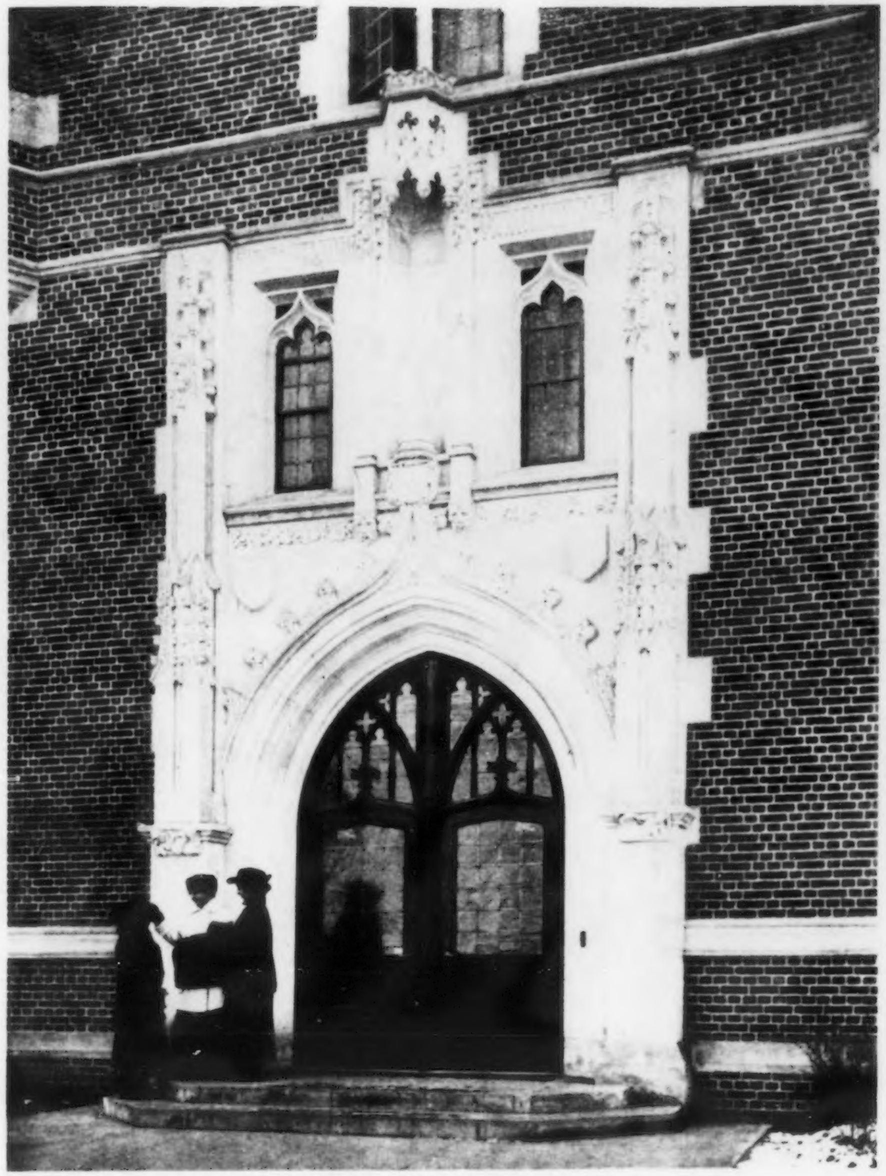


FIRST FLOOR PLAN

MARTHA COOK BUILDING, UNIVERSITY OF MICHIGAN, ANN ARBOR, MICH.

YORK & SAWYER, ARCHITECTS

DETAIL OF SIDE ENTRANCE



DETAIL OF MAIN ENTRANCE

MARTHA COOK BUILDING, UNIVERSITY OF MICHIGAN, ANN ARBOR, MICH.

YORK & SAWYER, ARCHITECTS

VIEW SHOWING FIREPLACE IN LARGE PARLOR

VIEW SHOWING CORRIDOR

MARTHA COOK BUILDING, UNIVERSITY OF MICHIGAN, ANN ARBOR, MICH.

YORK & SAWYER, ARCHITECTS

THE BRICKBVILDER COLLECTION OF

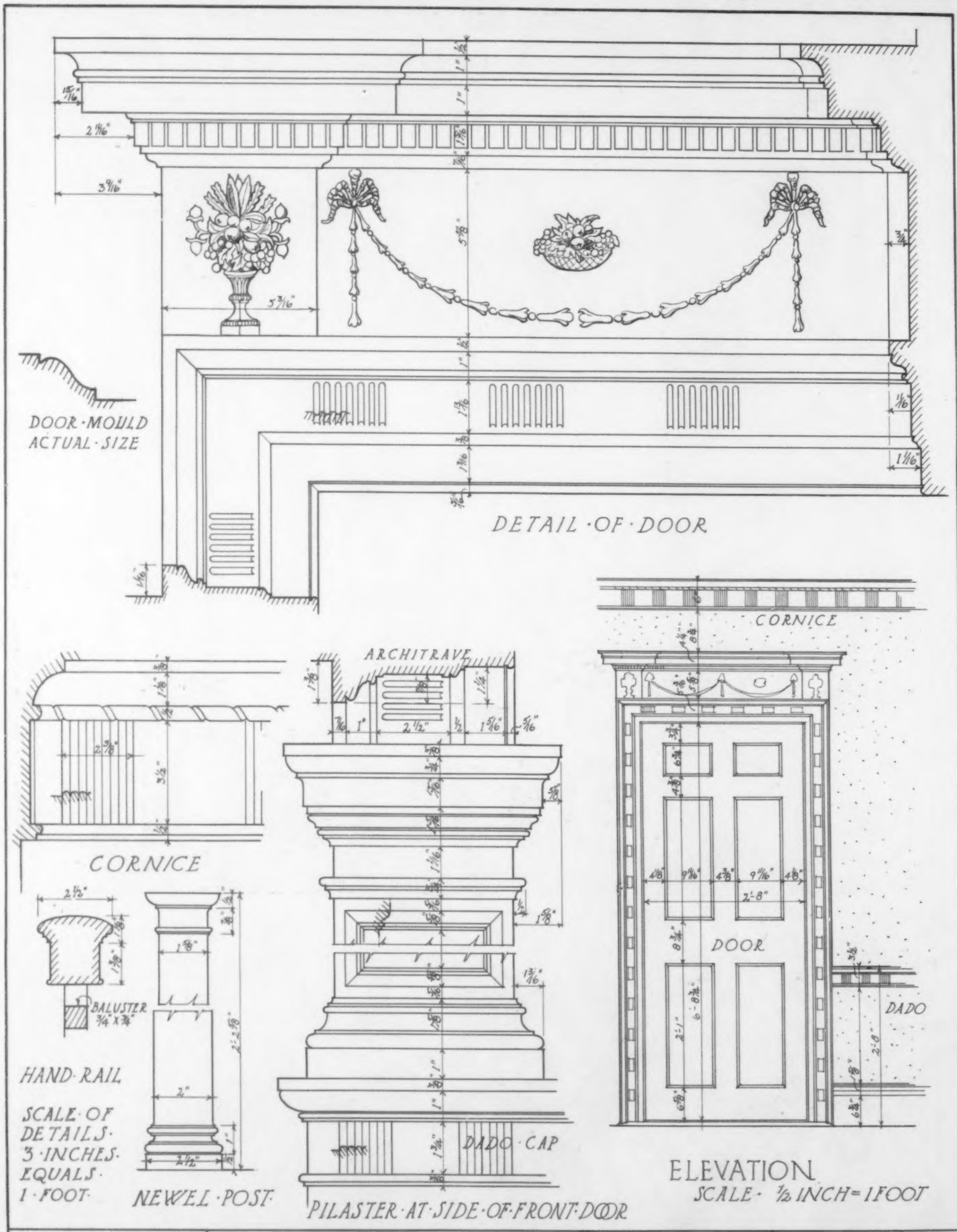
EARLY AMERICAN ARCHITECTURAL DETAILS.

PLATE FIFTEEN.

THE delicacy and character of the detail of this hallway shows well the excellence of the interior woodwork designed by Samuel McIntire. The cornice with its small frieze and simulations of triglyphs is unusually interesting, the grouping of reeded mouldings being echoed on the dado cap and on the architrave of the doorway. The wall paper, which is of a yellowish tone and in reality lighter in contrast than shown in the photograph, is a copy of an original Colonial pattern. In plan the hallway is unusual; although the front wall is square the back wall is semicircular, following the line of the beautiful winding stair. The house is commonly known as the Crowninshield-Devereux House, although it is now owned by Zina Goodell, who remodeled it, removing an ell from the side, putting it on the rear, and thus making a square house.

ENTRANCE HALL, CROWNINSHIELD-DEVEREUX HOUSE, SALEM, MASS.

MEASURED DRAWING ON FOLLOWING PAGE.



PLATE·15 FEBRUARY·1916	HALL·DETAILS·CROWNINSHIELD· ·DEVEREUX·HOUSE·SALEM·MASS· SAMUEL·McINTIRE·ARCHITECT· DATE·1805	MEASURED·& DRAWN·BY GORDON·ROBB

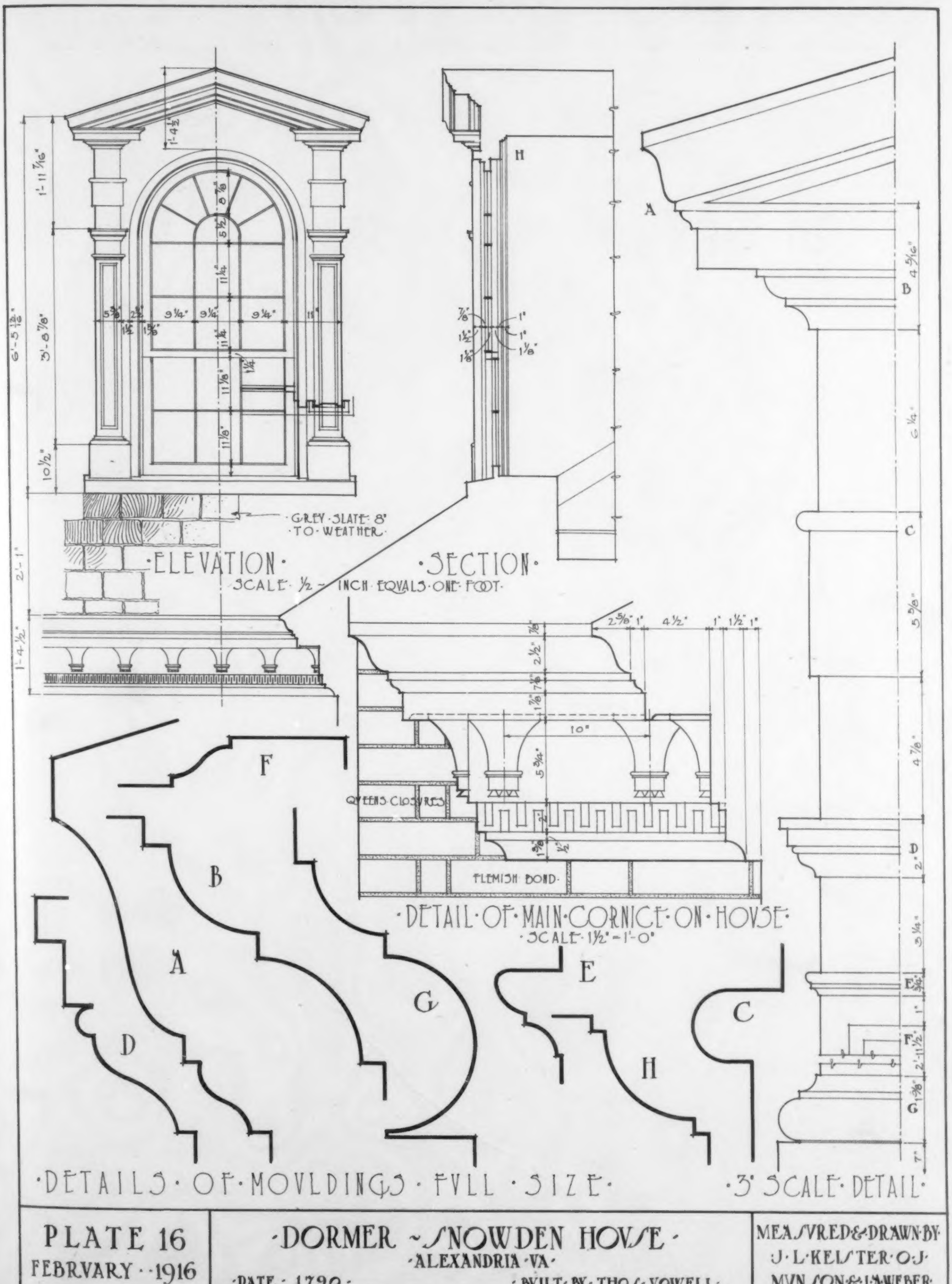


PLATE 16 FEBRVARY··1916	·DORMER ~ SNOWDEN HOVSE· ·ALEXANDRIA·VA· ·DATE· 1790· ·BVILT·BY·THOS·VOWELL·	MEASVRED & DRAWN·BY· J·L·KELSTER·O·J· MVNSON & J·A·WEBER·

PLATE SIXTEEN.

THIS example of small town house is quite typical of those built in Alexandria during Colonial times. It is so located that the front commands a beautiful view of the Potomac River. The brickwork of greatly variegated tones of red and brown gives a rich, contrasting background to the white woodwork of the doorway and the stone trim of the windows. The dormers are particularly interesting with the pleasing silhouettes formed by the pediments; their sides and roofs and the roof of the house are covered with gray slate. The exceptionally good cornice is of the type that is most characteristic of those used during the Colonial period.

SNOWDEN HOUSE, ALEXANDRIA, VA.

MEASURED DRAWING ON PRECEDING PAGE.

Some Italian Doors.

By JOHN H. SCARFF.

Accompanied by Measured Drawings by the Author.

THERE are few matters regarding art more worthy of consideration than the narrowness of the limits that bound human invention, but within those limits the range of the imagination is infinite. To-day we return to the old types of classical art and it seems at first sight as if there could be nothing new under the sun; as if the imagination, so fertile in creation during many centuries, had been utterly worked out and come to an end, and that there was nothing left but to repeat and copy what was done ages ago. But by the greatly increased number of materials and methods of working them the limits are extending far beyond our ability to assimilate, and the danger lies in mechanical and impersonal duplication. It is the increased demand and facility of production, by encouraging excessive speed, that causes the sterility of the imagination. Accepting the limits of material as fundamental, the range of possibilities is only set by our ability.

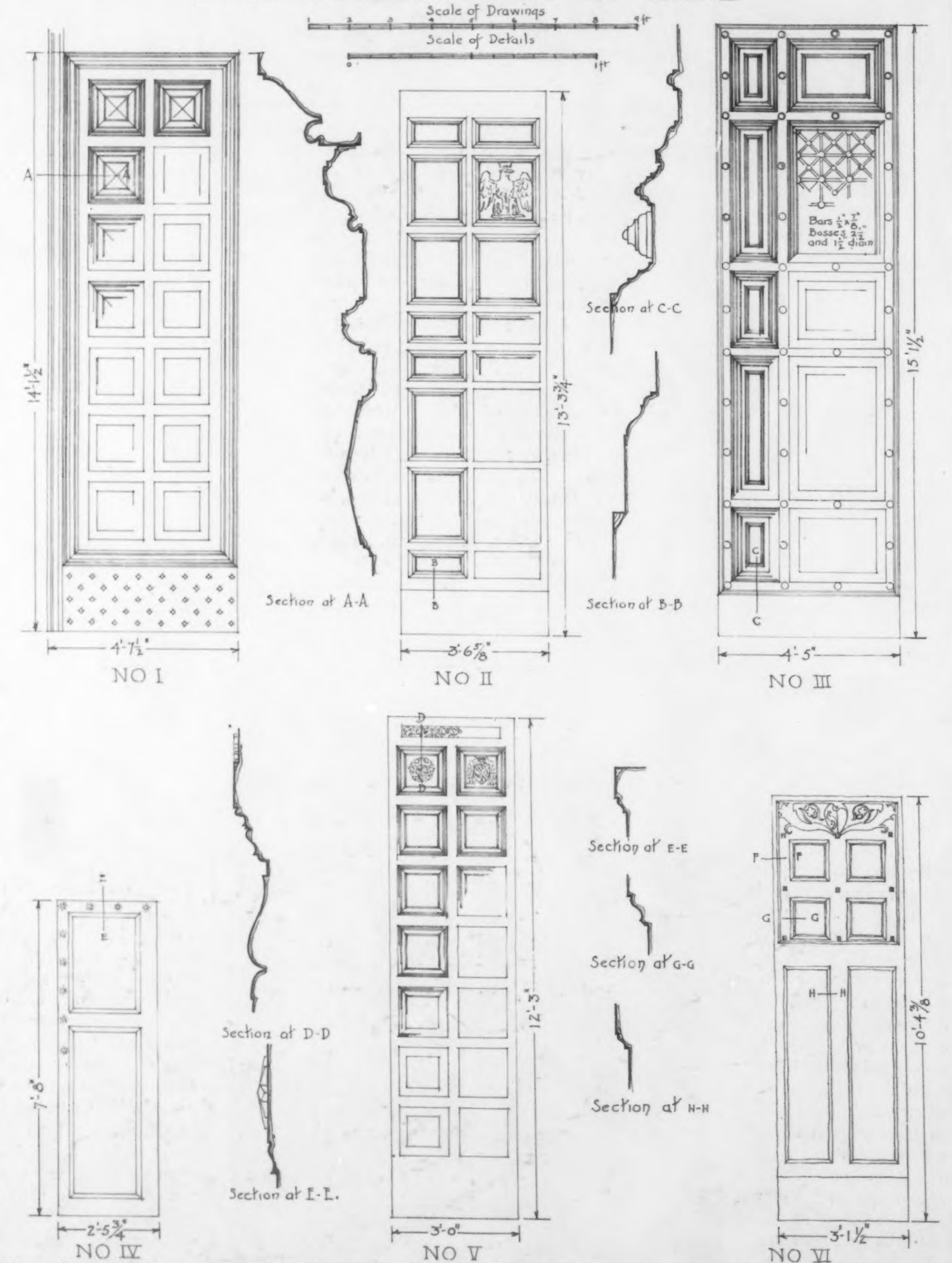
But two nations in the history of the world, Greece and Italy at the time of the Renaissance, have succeeded in giving to every one of their achievements the form of art. Nothing was produced in Italy between the thirteenth and seventeenth centuries, from the smallest objects of daily use to the palaces of princes, that did not bear the characteristics of a fine art. The doors shown in the accompanying drawings and photographs, chosen from an infinite number of possibilities throughout Italy, owe their distinction, apart from their pleasing and graceful proportions, to their strict adherence to structural limits and skilful adaptation of the materials. The wood doors show nothing but various combinations of rectangular panels with an occasional spot of carving, and the utilization of their structural nails and bolts as an element of interest and design. The metal covered doors, corresponding to the plebeian and unsightly kalamein of to-day, are of but two kinds, — those made up of large pieces of metal over the whole central portion of the door, with an all-over pattern of nail heads fastening the metal to the wooden core; and those of small rectangular pieces of metal, whose meeting is covered by metal straps, and they in turn held to the wooden core by an arrangement of nails and bolts. In no case is there a moulding of any sort — no imitation of another material but a design resulting from the natural and sincere use of metal. The wood doors are usually painted a dark green and the metal almost invariably a sage approximating the color of corroded copper.

The political conditions of Italy at that time more strongly influenced architecture than any one of the other arts. Semi-fortified houses became a necessity, and throughout the most brilliant period of the Renaissance the country was swept over and over again by struggles and strife — not only trod by foreign armies and at times fearful of invasion from the east, but rife with political intrigues, plots, conspiracies, and the jealousies of citizen against citizen, party against party, and city against city. Constant revolution had destroyed the last vestige of feudalism. The counts had become citizens and the rural population ceased to rank as serfs. But the counts as city dwellers proved but poor neighbors. They fortified their palaces, retained their military habits, and carried on feuds in the streets and squares. Not content with rivalries and jealousies among the citizens themselves, cities became deadly enemies. Rome attempted to ruin Tivoli, and Venice to ruin Pisa; Verona fought with Padua; Florence and Pisa with Lucca and Siena, and during the thirteenth century Guelf and Ghibelline factions divided Italy into minute parcels. At last the rivalry of cities became so acute that the famous invitation to Charles VIII was sent by Ludovico, Duke of Milan, and Italy from that time was overrun by foreign soldiers and for many years was destined to exchange one set of masters for another.

Doorway, Church of the Aracoeli

In such conditions of turmoil, treachery, and

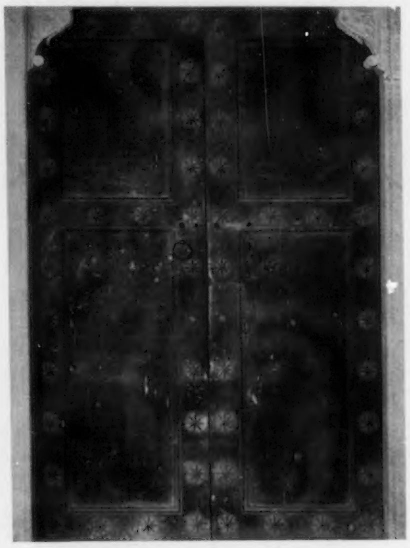
SOME WOODEN DOORS AT ROME



No. I - Palazzo del Governo Vecchio. No. II - Chiesa dell Aracoeli. No. III - Chiesa San Giacomo dei Spagnuoli. No. IV - San Giovanni in Laterano. No. V - Chiesa San Marco. No. VI - Piazza Pallarolo

crime, when statecraft was synonymous with treachery, Italian architecture was developed. Windows were grilled, heavy rusticated walls employed, and doors of heavy wood studded with iron to guard against the encircling foes that were even to be thought of.

Of the doors shown, No. I is at present the entrance to a public school in what was formerly an old palace on the Governo Vecchio, the main artery of traffic before the opening of the new Corso Vittorio Emanuelle between central Rome and the parts lying across the Tiber in the neighborhood of the Vatican. It is a large scale adaptation of the familiar square panel door, but here heavier than usual because of the development of the panel into a pyramidal form echoing the stone architrave around the opening. A wood frame runs around the entire opening, including both door and transom, and the whole design, as a glance at the larger scale section will show, is carried out with a great degree of refinement.



Doors, San Giovanni in Laterano

No. II is the door at the transept entrance to the Church of the Aracœli on the Capitoline. Here a delightful effect is obtained by very simple means. The pleasing arrangement of panels is saved from monotony by the addition of the two carved eagles. The section is quite simple and the doors are hung directly in the stone opening, with no wood frame to support them such as is shown in example No. I.

No. III occurs at the Piazza Navona entrance to the Church of San Giacomo of the Spaniards, where the discovery of America was first celebrated in Rome. It is a later and more developed design and shows the introduction of the decorated bolt head. The interior of the church is little known and rarely visited in spite of the fact that it contains an exquisite painted marble balcony of the early Renaissance, one of the most perfect bits of architecture to be found anywhere in an architect's travels.

No. IV is of bronze and not of wood, but is added because of the beautiful refinement of its simplicity. It is in a remote corner of the cloister of San Giovanni in Laterano and seldom seen.

No. V is one of the best examples of the simple, square panel type. The careful, small scale section gives a complication of lines that is very pleasing in so simple a scheme. With fine Italian taste the carving gives a distinction hard to equal. It is interesting and instructive to compare the relative scales of carving to panel-section here and in No. II. The door is to be found in the beautiful arcaded loggia of San Marco, almost opposite the new Victor Emanuel monument.

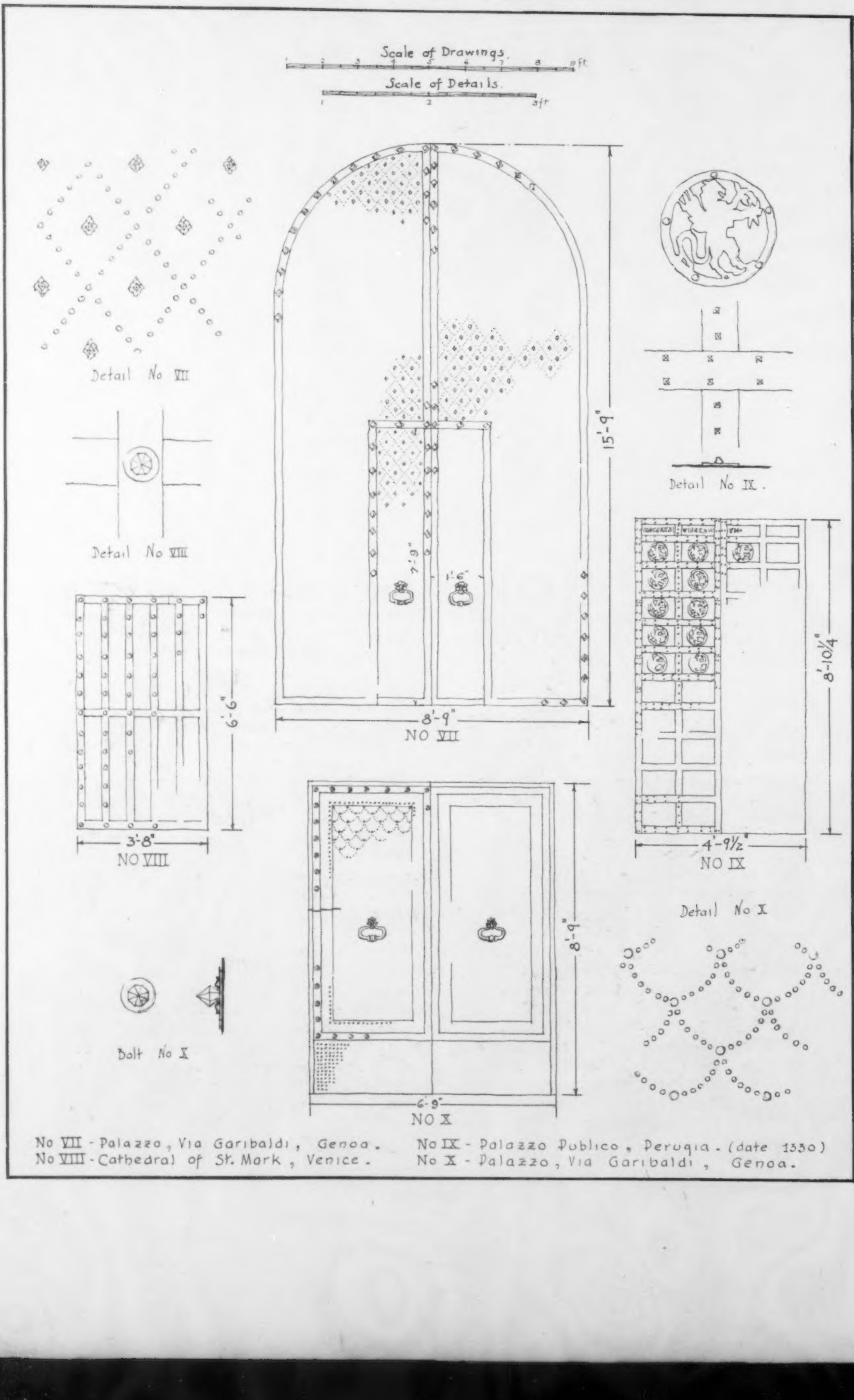
No. VI shows the entrance doors of an old palace on the Piazza Pallarolo near the Farnese palace, and is undoubtedly an alteration. Originally the door was of a scheme similar to No. V, the square panels making the entire door; but at a later date the lower and simple part was added, resulting in a very suggestive whole. The carving at the top has been much mutilated, and only enough remains to indicate the general scheme of decoration.

Nos. VII to X inclusive are some of the aristocratic ancestors of the modern kalamein. Unlike the later day variety which becomes, with

Doorway, Palace on the Governo Vecchio

Doorway, Church of San Giacomo of the Spaniards

Doorway, Palace on the Piazza Pallarolo


Scale of Drawings
1 2 3 4 5 6 7 8 9 ft.
Scale of Details
1 2 3 ft
Detail No VII
Detail No VIII
15'-9"
7'-9"
1'-6"
8'-9"
NO VII
Detail No IX.
6'-6"
3'-8"
NO VIII
8'-10¼"
4'-9½"
NO IX
Detail No X
Bolt No X
8'-9"
6'-9"
NO X
No VII - Palazzo, Via Garibaldi, Genoa.
No VIII - Cathedral of St. Mark, Venice.
No IX - Palazzo Publico, Perugia. (date 1330)
No X - Palazzo, Via Garibaldi, Genoa.

battered and dented mouldings, so dilapidated and disreputable, these early doors seem designed especially for rough treatment and actually look better with the scars and bruises of age. They are of a type more often seen in northern Italy than in Rome. It is with the hope that they will prove suggestive to the modern architect with a similar problem that they are incorporated.

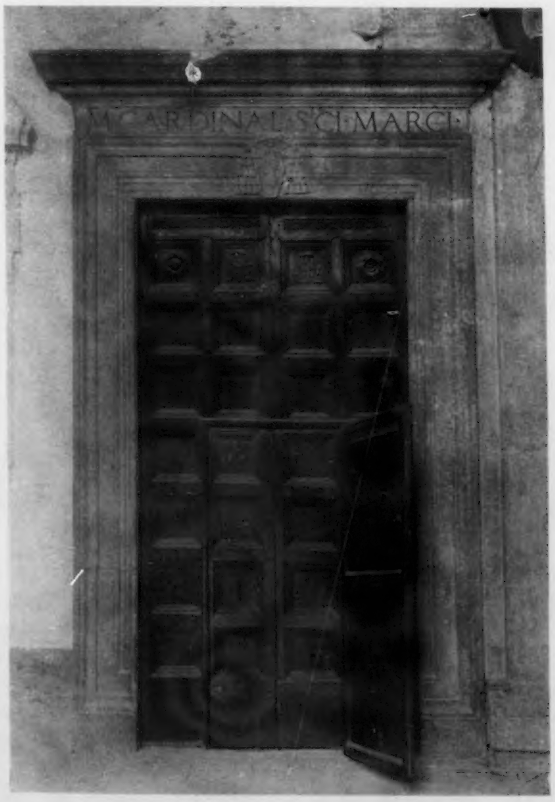
No. VII is the entrance door to a palace on the Via Garibaldi, Genoa. The small doors are arranged for ordinary purposes in an opening whose size is determined by the scale of the whole façade, and gives pleasing variety in what might otherwise seem a large and monotonous surface. The nails are not put in with mathematical accuracy, which gives a pleasing personal element.

No. VIII is a very small iron door to the right of the altar in the Cathedral of St. Mark's, Venice. This is an example, along with No. IX, of the metal plate covered by straps, and the lack of precision again adds to the charm. In this case the rusted iron surface is without paint.

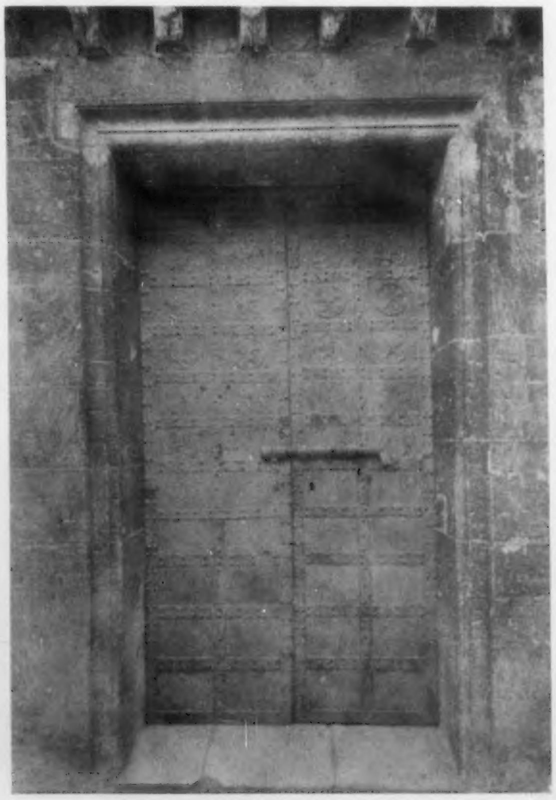
No. IX is a further developed design with great distinction. It is rarely seen because to-day it is not used and is only found through a spirit of prowling investigation which in Italy is seldom unrewarded. It is the piazza entrance to the Palazzo Publico in Perugia. Apart from the design itself the variation in the size of the panels, the freedom from stiffness in the execution, and the appliqué all contribute to the pleasing effect of the whole. The metal straps are ⅛ inch thick, and the circular cut-out appliqués and the lettering at the top are from the same sheet metal. The straps are made up of different lengths, just as the material came to hand.

No. X, similar to No. VII, is also from a palace in the Via Garibaldi and is of a type quite common in Genoa. The additional relief given by the large handles is quite welcome on so flat a surface.

Such as these were the less important and inconspicuous doors of the Italian Renaissance. During that period of prodigious activity a whole people seemed to be endowed with an instinct for the beautiful and with the capacity for producing it in every imaginable form. On the smallest objects of daily use, saucepans and plates, towels and bed-covers, candlesticks and metal fixtures, floor tiles, a wealth of artistic invention was lavished by innumerable craftsmen not only capable of great technical skill, but distinguished by almost faultless judgment and taste. And to-day, in spite of centuries of war, robbery, and purchase, in spite of the tramping of foreign hordes over her plains and through her fair cities, Italy is still the treasure land of Europe and has abundantly to give to those that seek still the magic land of inspiration.



Doorway, Church of San Marco



Doorway, Palazzo Publico at Perugia

EDITORIAL COMMENT AND NOTES FOR THE MONTH

IT has been said, and with considerable truth, that times and conditions create genius; that if we, as a people, should demand a Shakespeare, we would realize one. This is by way of illustrating the fact that, in the realization of any high standard of artistic expression, more depends upon the attitude of the public than upon individual accomplishments.

Those who are primarily interested in education along the lines of the pictorial arts, painting and sculpture, have realized that to cultivate a general desire for these things the best way is to look far into the future and to start with the citizens of that future as represented in the youth of to-day. Lectures with lantern slides, exhibitions of prints, and museum tours are among the many ways by which the school children of to-day are being brought to realize, at least partially, the purpose and scope of the fine arts and to appreciate what is good in these arts. The museums in the larger cities have definite departments and certain officials to attend to this particular phase of work.

While there is much encouragement for architecture to be found in these activities, since an appreciation of one art must react on the appreciation of the others, it is nevertheless unfortunate that there is not a more definite course being taken in respect to architectural education among the students in the high schools and higher grades of the grammar schools. To be sure, any such educational effort would have to be simple, for youth cannot be expected to appreciate, or even realize, subtleties of proportion, delicacy of detail, and the philosophy of expression. But neither can they understand harmony of color or grace of line in paintings and sculpture. The effort is not to create 100 per cent. artists or to give all the ability to understand completely; it is rather to give a realization that there are these higher expressions of life, a beauty from which man can derive pure enjoyment, and this purpose can be held in architecture as well as in the other arts. An admission of the value in such education is seen in the fact that music is taught to the young, so that by living in that atmosphere during impressionable years they may, practically unconsciously, acquire a sense of appreciation.

The educational efforts of the museums could easily include reference to architecture which would place this art in the minds of the coming generation not as a mere necessary housing of man, but as one of his several modes of artistic expression; while by the use of illustrations the eye could be cultivated to have a certain sense of architectural beauty, just as the ear can be made to appreciate harmonies of sound. Education along these lines would undoubtedly have a wonderful effect on the architecture of the future, for it would do much to bring about an appreciative public, demanding certain standards and able to damn those efforts which fall short. The great periods of art verify this, since in each case they have been at times when there was a very general understanding of architecture among the people.

The Chicago City Plan Commission has realized the importance of early education and a few years ago introduced into the grade schools a text-book on city planning. It is a very simple book, bringing out the essential reasons for and of good city planning and illustrating by historical examples the various points which are made. A large share of the book is, of course, given to the consideration of the Chicago plan, both in general scheme and in detail. It is realized that the working out of such a tremendous undertaking as the Chicago plan is a matter which will not take place during this generation and it is hoped, therefore, that when future generations are voting on questions of bond issues for this cause, they will better understand the purposes of their votes. Such must be the result, for though none of to-day's youth may remember that Major L'Enfant made the original layout for Washington or that Paris has a very excellent system of radial and circular streets, they all will realize that there is such an ideal consideration as city planning and that it is of value to all the community quite apart from the interests of any particular political party or ward organization.

MUCH encouragement is to be found in the compilation of building permits issued in various parts of the country during January. The totals, as compared with former years, would seem to indicate a return to the normal volume of business in construction work. Baltimore, Boston, Buffalo, Chicago, Detroit, Kansas City, Los Angeles, Minneapolis, Philadelphia, Salt Lake City, and Washington — to say nothing of such "war babies" as Allentown and Bridgeport — show marked percentages of gain over the amounts recorded in January, 1915. While a few cities, among which are New York, Pittsburgh, and San Francisco, show a loss, this may be regarded as accidental and due entirely to unusual local and transitory circumstances which cannot be taken as indicative of any general trend of business activity.

THE American Academy in Rome announces its competitions for the prizes of Rome in architecture, painting, and sculpture. Application blanks and other information concerning the date and places of the preliminary competition and the qualifications demanded of competitors may be obtained from the secretary, C. Grant La Farge, 101 Park Avenue, New York City.